July 2016

Disproportionate Suspension Rates: Understanding Policy and Practice in One State

Kristine A. Camacho
University of Massachusetts Amherst

DISPROPORTIONATE SUSPENSION RATES: UNDERSTANING POLICY AND PRACTICE IN ONE STATE

A Dissertation Presented

by

KRISTINE A CAMACHO

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 2016

Education
Special Education

DISPROPORATIONATE SUSPENSION RATES: UNDERSTANDING POLICY AND PRACTICE IN ONE STATE

A Dissertation Presented

By

KRISTINE A CAMACHO

Approved as to style and content by:

_____
Michael P. Krezmien, Chair

_____
John C. Carey, Member

_____
Robert D. Marx, Member

_____
Joseph Berger, Senior Associate Dean
College of Education

DEDICATION

To my husband Dario and to my parents for all of their love, support, and encouragement

and

To Jed for all the long walks and much needed work breaks over the last four years

ACKNOWLEDGEMENTS

I would like to thank my dissertation advisor, Dr. Michael Krezmien, for all of his feedback and guidance throughout my time in the special education program and especially on this dissertation. I would also like to thank him for helping to check the accuracy of all data included in this dissertation and for helping to verify the information coded for each handbook. Without his help, this dissertation would not have been possible.

I would also like to thank Dr. Jay Carey for his feedback and help with this dissertation and for his support in helping to code data from the various handbooks included in this study. I would also like to thank him for his support and guidance throughout my time in the special education program.

Additionally, I would like to thank Dr. Robert Marx for serving on my dissertation committee and for offering advice and suggestions that helped to improve the final copy of this manuscript.

This dissertation would also not have been possible without the support of Ayse Yakut. Her help in evaluating each of the handbooks included in this study was critical. I am grateful for all of the time and effort she put in to this process.

Lastly, I would like to acknowledge Dr. Pamela Fenning at Loyola University for sharing her *Analysis of School Discipline Coding Rating Form-Revised* and for allowing its use in this study. I would also like to acknowledge her graduate students who spoke with me on the phone and explained how to use this measure.

ABSTARCT

DISPROPORTIONATE SUSPENSION RATES: UNDERSTANDING POLICY AND PRACTICE IN ONE STATE

MAY 2016

KRISTINE A CAMACHO, B.S.E., WESTFIELD STATE UNIVERSITY

M.ED., CAGS, WORCESTER STATE UNIVERSITY

PH.D., UNIVERSITY OF MASSACHUSETTS AMHERST

Directed by: Dr. Michael P. Krezmien

This paper presents the findings from two studies. The first study examined the individual and school level factors associated with the risk of suspension for specific groups of students. Results indicated that gender, race, and disability status were individual factors associated with an increased risk of suspension. Multiple school level factors were also found to be associated with an increased risk of suspension including school enrollment, attendance, mobility, the percent of classes not taught by highly qualified teachers, the percent of students receiving free and reduced priced meals, the percent of special education students, Title One status, the student to teacher ratio, English Language Arts scores, and the percent of White students in the school. The second study examined the odds of suspension alongside school policy factors. Results from this study indicated that students who were Black or African American and who had a disability were more likely to be suspended from school compared to students who were White and who did not have a disability. Policy factors indicated that the majority of school districts continue to utilize negative, rather than proactive, consequences for addressing a student's failure to comply with school behavioral expectations. Odds ratios

and the percent of students suspended by race and by disability status will be presented alongside data relative to school policy factors. Implications will be discussed.

TABLE OF CONTENTS

Page

Page

Page

Page

Page

Page

Page

Page

Page

Page

LIST OF TABLES

Table Page

Table Page

CHAPTER I

THE ISSUE OF DISPROPORTIONATE SUSPENSION RATES

Introduction

The Gun Free Schools Act (1994) mandated that all states receiving federal funds expel students from public schools for no less than a year for bringing weapons to school. The aim of this law was well intentioned- to ensure school safety. Problematic to this law was that this policy of mandatory expulsion soon began to apply to less serious offenses such as truancy, skipping class, and disrupting a class period (Monahan, VanDerhei, Bechtold, & Cauffman, 2014). Students began receiving school suspensions for these offenses and were sent home from school for offenses that previously would not have resulted in this consequence. This approach was named the zero tolerance approach. Inherent in this approach was the notion that schools had no tolerance for instances of breaking the school rules and that all students, regardless as to the reason an infraction was committed, would receive the same consequence. Many problems soon emerged with this philosophy, and by 2010, over three million students were suspended on an annual basis from our public schools (Losen & Gillespie, 2012).

Much research has been published on school suspensions since the enactment of zero tolerance policies during the mid-1990s. Research can be grouped into studies that have examined individual student factors and school factors that influence school suspension rates. This literature will briefly be reviewed before examining recent legal changes that have been developed to counter high rates of student suspensions. The purpose of this study, research questions, and key terms will then be reviewed in order to clearly state the research purpose and intent of this research study.

Individual Factors that Influence Suspension Rates

An abundance of research suggests that individual student factors such as race (Achilles, McLaughlin, & Croninger, 2007; Anfinson, Autumn, Lehr, Riestenberg, & Scullin, 2010; Arcia, 2007a; Arcia, 2007b; Blake, Butler, Lewis, & Darensbourg, 2011; Bowman-Perrot, Benz, Hsu, Kwok, Eisterhold, & Zhang, 2013; Bruns, Moore, Stephan, Pruitt, & Xinst, 2005; Butler, Lewis, Moore, & Scott, 2012; Christle, Nelson, & Jolivette, 2004; Cooley, 1995; Costenbader & Markson, 1998; Duran, Zhou, Frew, Kwok, & Benz, 2013; Eitle & Eitle, 2004; Fasko, Grubb, & Osborne, 1995; Davis Ganao, Suero Silvestre, & Glenn, 2013; Gregory, Cornell, & Fan, 2011; Hannon, DeFina, & Bruch, 2013; Hinjosa, 2008; Hoffman, 2014; Kaplan & Cornell, 2005; Kaushal & Nepomnyaschy, 2009; Kinsler, 2011; Krezmien, Leone, & Achilles, 2006; Losen, Simmons, Staudinger-Poloni, Rausch, & Skiba, 2003; Mattison & Aber, 2007; McFadden, Marsh, Price, & Hwang, 1992; Mcloughlin & Noltemeyer, 2010; Mendez, 2003; Mendez & Knoff, 2003; Mendez, Knoff, & Ferron, 2002; Nichols, 2004; Noltemeyer & Mcloughlin, 2010a; Noltemeyer & Mcloughlin, 2010b; Pei, Forsyth, Teddlie, Asmus, & Stokes, 2013; Petras, Masyn, Buckley, Ialongo, & Kellam, 2011; Rausch & Skiba, 2004; Rouse, Fantuzzo, & LeBoeuf, 2011; Shirley & Cornell, 2011; Skiba et al., 2011 ; Skiba, Michael, Nardo, & Peterson, 2002; Skiba, Peterson, & Williams, 1997; Smith-McKeever, Falconnier, & Gao, 2010; Sullivan, Klingbeil, & Norman, 2013; Theriot, Craun, & Dupper, 2010; Tobin & Vincent, 2011; Vincent, Sprague, & Tobin, 2012; Vincent & Tobin, 2011; Wallace, Goodkind, Wallace, & Bachman, 2008;Welch & Payne, 2012; Wright, Morgan, Coyne, Beaver, & Barnes, 2014; Zhang, Katsiyannis, & Herbst, 2004), gender (Achilles et al., 2007; Bowman-Perrot et al.,

2013; Butler et al., 2012; Christle et al., 2004; Cooley, 1995; Costenbader & Markson, 1998; Duran et al., 2013; Fasko et al., 1995; Gage, Josephs, & Lunde, 2012; Hannon et al., 2013; Hemphill, Plenty, Herrenkohl, Toumbourou, & Catalano, 2014; Hinjosa, 2008; Kaplan & Cornell, 2005; Mattison & Aber, 2007; McFadden et al., 1992; Mendez & Knoff, 2003; Mendez, 2003; Petras et al., 2011; Rouse et al., 2011; Skiba et al., 2002; Skiba et al., 1997; Sullivan et al.., 2013; Wallace et al., 2008;Welch & Payne, 2012; Wright et al., 2014), disability status, (Achilles et al., 2007; Anderson, Howard, & Graham, 2007; Bowman-Perrot et al., 2013; Cooley, 1995; Duran et al., 2013; Fasko et al., 1995; Goran & Gage, 2011; Kaplan & Cornell, 2005; Krezmien et al., 2006; Mendez, 2003; Skiba et al.,1997; Sullivan et al., 2013; Vincent et al., 2012; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005; Xin, Yu, & Shauer, 2014; Zhang et al., 2014), and socioeconomic status (Achilles et al., 2007; Anderson et al., 2007; Arcia, 2007b; Bowman-Perrot et al., 2013; Bruns et al., 2005; Butler et al., 2012; Christle et al., 2004; Duran et al., 2013; Davis Ganao et al., 2013; Gregory et al., 2011; Hemphill et al., 2014; Kaushal & Nepomnyaschy, 2009; Mendez, 2003; Mendez, Knoff, & Ferron, 2002; Mcloughlin & Noltemeyer, 2010; Nichols, 2004; Petras et al., 2011; Rouse et al., 2011; Skiba et al., 2002; Skiba et al, 1997; Smith-McKeever et al., 2010; Sullivan et al., 2013; Theriot et al., 2010; Welch & Payne, 2012), influence a student's risk of being suspended from the public school setting.

Authors of many studies (Achilles et al., 2007; Anfinson et al., 2010; Arcia, 2007a; Arcia, 2007b; Blake et al., 2011; Bowman-Perrot et al., 2013; Butler et al., 2012; Cooley, 1995; Costenbader & Markson, 1998; Duran et al., 2013; Davis Ganao et al., Gregory et al., 2011; Hinjosa, 2008; Hoffman, 2014; Kaushal & Nepomnyaschy, 2009;

Krezmien et al., 2006; Mattison & Aber, 2007; McFadden et al., Mendez, 2003; Mendez & Knoff, 2003; Mendez, Knoff, & Ferron, 2002; Noltemeyer & Mcloughlin, 2010a; Noltemeyer & Mcloughlin, 2010b; Pei et al., 2013; Petras et al., 2011; Rausch & Skiba, 2004; Rouse et al., 2011; Shirley & Cornell, 2011; Skiba et al., 2011 ; Skiba et al., 2002; Skiba et al., 1997; Smith-McKeever et al., 2010; Sullivan et al., 2013; Tobin & Vincent, 2011; Vincent et al., 2012; Vincent & Tobin, 2011; Wallace et al., 2008; Wright et al., 2014; Zhang et al., 2004) consistently found that African American or Black students were more likely to be suspended from school. Some researchers (Arcia, 2007a, Blake et al., 2011; Hinjosa, 2008; Mendez & Knoff, 2003; Mendez et al., 2002; Nichols, 2004; Rouse et al., 2011) suggest that these students may be as much as two to three times more likely to be suspended from school. Authors reported mixed findings for Hispanic and Latino students with some researchers (Afinson et al., 2010; Rausch & Skiba, 2004; Zhang et al., 2004) reporting that these students were overrepresented in suspensions while other researchers (Cooley, 1995; Krezmien et al., 2006) reported that they were suspended at a rate similar to that of White students. Skiba and colleagues (1997) found that Native American students were disproportionately suspended. Authors (Rouse et al., 2011; Sullivan et al., 2013; Wallace et al., 2008) consistently reported that Asian American students were least likely to be suspended from school.

The impact of gender on suspension rates has also been studied. The majority of researchers (Achilles et al., 2007; Bowman-Perrot et al., 2013; Cooley, 1995; Costenbader & Markson, 1998; Duran et al., 2013; Gage et al., 2012; Hannon et al., 2013; Hinjosa, 2008; Mattison & Aber, 2007; McFadden et al., 1992; Mendez, 2003; Mendez & Knoff, 2003; Petras et al., 2011; Rouse et al., 2011; Skiba et al., 2002; Skiba

et al., 1997; Sullivan et al., 2013; Wright et al., 2014) found that male students were more likely to be suspended from school. Rouse and colleagues (2011) reported that males were 4.22 times more likely to be suspended from school compared to their female counterparts.

Students with disabilities were reported to be suspended more frequently compared to students without disabilities (Anderson et al., 2007; Cooley, 1995; Fasko et al., 1995; Goran & Gage, 2011; Mendez, 2003; Krezmien et al., 2006; Skiba et al., 1997; Sullivan et al., 2013; Vincent et al., 2012). Authors (Cooley, 1995; Krezmien et al., 2006; Wagner et al., 2005) reported that students who had emotional or behavioral disabilities were more likely to be suspended compared to students who had other primary disabilities. Wagner and colleagues (2005) reported that, amongst secondary school students, 72.9% of students with an emotional disability reported being suspended from school compared to 27.6% of students with other disabilities.

Authors of many studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Christle et al., 2004; Duran et al., 2013; Gregory et al., 2011; Hemphill et al., 2014; Mendez, 2003; Mendez, Knoff, & Ferron, 2002; Mcloughlin & Noltemeyer, 2010; Nichols, 2004; Petras et al., 2011; Rouse et al., 2011; Skiba et al., 1997; Sullivan et al., 2013; Theriot et al., 2010; Welch & Payne, 2012) have reported that socioeconomic status plays a role in suspension rates. Authors (Anderson et al., 2007; Mcloughlin & Noltemeyer, 2010; Nichols, 2004; Petras et al., 2011; Skiba et al., 1997) reported that students from lower socioeconomic status groups were more likely to be suspended from school compared to students from higher socioeconomic statuses. Smith-McKeever and

Gao (2010) reported that living in a higher socioeconomic status home acted as a protective factor against school suspension.

School Factors that Influence Suspension Rates

Researchers (Butler et al., 2012; Kaplan & Cornell, 2005) have found that suspensions increase as students grow older and that the majority of suspensions take place at the secondary level. Authors reported that schools with higher academic achievement rates (Arcia, 2001a; Goran & Gage, 2011; Mendez et al., 2002), higher average daily attendance rates (Bruns & Moore, 2005), and those schools who had behavioral intervention programs in place (Tobin & Vincent, 2011) had lower suspension rates. Christle and Nelson (2004) reported that schools with higher retention rates, higher dropout rates, more board of education violations, and lower school attendance rates had higher suspension rates.

Student perceptions of the school environment correlated with suspension rates. Students who had a positive perception of school were less likely to be suspended (Mattison & Aber, 2007), while those who were less interested in school (Costenbadder & Markson, 1998) were more likely to be suspended.

Teacher factors were noted to affect suspension rates. School districts who had higher teacher quality and increased numbers of teachers teaching in their field were noted to have lower suspension rates (Losen e al., 2003).

Lifelong Consequences

Suspension from school matters for many reasons. Increased suspension rates led to an increase in school dropout rates (Lee, Cornell, Gregory, & Fan, 2011) and students who were suspended from school were statistically more likely to be incarcerated at some point during their lifetime (Losen & Gillespie, 2012). Once involvement in the justice

system begins, a cyclical pattern emerges as parents who were involved with the justice system tend to have children who also become involved in the justice system (De Ravello, Abeita, & Brown, 2008). It becomes clear that something must be done to stop this cycle of school suspension and later involvement with the justice system.

The Role of the School District

School leaders and administrators can be key personnel in breaking this suspension cycle (Wilson, 2013). Wilson (2013) stated that school leaders can either continue to expel students and force them out of school and thus into the criminal justice system or they can work to keep children in school by focusing on alternatives to automatic suspension and expulsions. The first step in resolving this issue is moving away from the zero tolerance approach that has been in place for over twenty years. This process has already started in many states throughout the country.

Two states who have developed alternative policies to automatic suspension are Massachusetts and Maryland. Massachusetts changed its laws relative to suspension and expulsion effective July 1, 2014 (Student Discipline, 2014). School administrators were encouraged to exercise discretion in disciplinary proceedings. They were told that they must find ways to re-engage students in school and find alternatives to long-term suspensions. Alternatives included in the new legislation were mediation, conflict resolution, restorative justice, and the use of positive behavioral supports (Student Discipline, 2014).

A similar situation emerged in Maryland during 2014. Maryland state guidelines reported that each school district in the state was charged with creating a new discipline code of conduct that shifts away from zero tolerance (Maryland State Department of Education, 2014a). School officials must create new discipline codes of conduct that: 1) teach appropriate behaviors 2) create a positive school environment 3) create a safe school

environment and 4) keep students in schools so that they can graduate. Prevention, intervention, restoration, and incentive-based approaches were all emphasized in these new regulations.

Critically important to the new Maryland regulations was the fact that this new document specifically addresses disproportionality in suspension rates. The Maryland Department of Education stated that schools must not have discipline policies that disproportionally use harsh and exclusionary techniques on certain groups of students (Maryland State Department of Education, 2014a). School administrators must work to revise policies when they are found to disproportionally harm certain groups of students.

Purpose

Study 1

Studying individual factors that influence suspension rates has led to only a minimal understanding as to which factors influence suspension rates. It can be argued that examining individual level factors, in the absence of school level factors, leaves researchers with an incomplete picture as to what is most likely to influence suspension rates in public schools. Further, studying only individual factors is problematic as these factors are static and cannot be changed by school personnel. Studying school level factors in isolation is also problematic. While studies of school level factors have changed our understanding of the relationship between school characteristics and suspension rates, these studies have not enabled the field to understand how the school factors and individual factors interact to exacerbate or ameliorate the risk of disciplinary suspensions.

Studies that have examined both individual and school level factors have examined this issue primarily using data from schools (Petras et al., 2011; Sullivan et al.,

2013,2014) with only one study examining this issue using data from an entire state (Skiba, 2014). Skiba and colleagues included three individual level factors in their analysis: race, gender, and free and reduced priced meal status. Additional research is needed to expand the use of multilevel modeling at the state level using additional factors not considered by these researchers.

The purpose of the current study is to investigate disciplinary suspension practices in one state using a multilevel model This study will add to the existing research by including race, gender, and disability status as level one predictors to gain a better understanding of how individual and school level factors interact to influence suspension rates. It will also include eleven school level factors in order to better understand the school level factors that influence disproportionate suspension rates. This study examined one research question: *How do school and individual level factors affect the risk of suspension by race, by gender, and by disability status?*

Study 2

Even though authors have studied the content of school discipline policies and differences in infractions between the policies themselves, no study to date has examined the relationship between school discipline policies and school suspension rates in a single study. Since many states are currently mandating that schools revise discipline policies to move away from zero tolerance approaches, it is important for researchers to know which policies may lead to lower suspension rates before individuals can advocate for any change in practice. As much of the research has focused on factors unique to students, such as race and disability status, rather than school factors, a greater understanding as to what policy factors influence suspension rates is needed.

The purpose of this research study is to examine both suspension practices and school disciplinary policies in order to understand the relationship between school policy and student suspension rates. This manuscript proposes two discrete but integrated studies. Study one address the question: *What are the current suspension outcomes in Maryland public schools?* Study 2 addresses two questions: *What types of disciplinary policies do the districts employ?* And *Is there a relationship between disciplinary policies and disciplinary outcomes?*

Definition of Terms

Behavioral infraction- Failure to follow the school's behavioral expectations.

Calendar Handbook- A district-specific document describing the district discipline policies. May also be referred to as the Code of Conduct or Students' Rights and Responsibilities.

Code of conduct- A district-specific document describing the district discipline policies. May also be referred to as the Calendar Handbook or Students' Rights and Responsibilities.

Disproportionate- Exclusion that occurs at a higher rate given one's race, gender, or disability status. Statistically significant differences were examined based on race, gender, and disability status with White students, male students, and students without disabilities serving as the reference group in Study 1. Statistically significant differences were examined based on race and disability status with White students and students without disabilities serving as the reference group in Study 2.

District level factors- Characteristics that were unique to a school district in the state, such as policies outlined in the Calendar Handbook, Code of Conduct, or Students Rights and Responsibilities.

Enrollment- The number of students enrolled in Maryland Public Schools on September 30, 2012.

Individual factors- Characteristics that were unique to an individual student (race, disability status, and gender in Study 1; race and disability status in Study 2).

Level of analysis- Any of the three levels utilized in this study. Levels included individual and school level factors in Study 1 and individual and district level factors in Study 2.

Maryland State Report Card- A document in Maryland that provided comprehensive school demographic information and achievement data.

Negative consequence- An approach to discipline that was determined to be punitive in nature.

Out of school suspension- Removal from the school environment for one or more days with the ability to return to school following the consequence period.

Positive consequence- An approach to discipline that involved proactively responding to student infractions of school rules.

Race- Whether a student identified as: 1) American Indian / Alaska Native 2) Asian 3) Black / African American 4) White 5) Hispanic 6) Native Hawaiian or Other Pacific Islander or 7) Two or more races. Analyses were conducted on Black / African American and White students in Study 1 and on Black / African American, White, and Hispanic students in Study 2.

School district- Schools that were grouped together under a common school Board of Education based on geographic location. There were 24 public school districts in the state of Maryland included in this study.

School factors- Eleven characteristics (school enrollment, attendance rate, mobility rate, the percent of classes not taught by highly qualified teachers, the percent of students receiving special education services, the percent of students receiving free and reduced priced meals, proficiency on state math exams, proficiency on state reading / English exams, Title One status, the percent of White students, and the student to teacher ratio) that were unique to a given school.

Student with a disability- A student who qualified for special education services under the Individuals with Disabilities Education Act. These disabilities include the following: 1) Autism 2) Deaf-blind 3) Deafness 4) Developmental delay 5) Emotional disturbance 6) Hearing impairment 7) Intellectual Disability 8) Multiple disabilities 9) Orthopedic impairment 10) Other health impairment 11) Specific learning disability 12) Speech and language impairment 13) Traumatic brain injury and 14) Visual impairment including blindness.

Students Rights and Responsibilities- A district-specific document describing the district discipline policies. May also be referred to as the Code of Conduct or Calendar Handbook.

CHAPTER II

LITERATURE REVIEW

Literature Review

Authors of any research study are required to perform a thorough review of literature. This process provides a conceptual understanding for the research topic and provides readers with an understanding of research that has already been done (Gersten, et al., 2005). This portion of this paper will accomplish three major goals: 1) It will describe the search procedures utilized to find articles that have previously been published on this topic. 2) It will describe the findings that are relevant to this topic based on a review of previous literature. 3) It will review the methodological rigor of past studies to better understand the quality of previous studies.

Search Procedures

A search of key terms using Academic Search Premier, the Educational Resources Information Center (ERIC), and PsychInfo was conducted. Databases were searched for articles from within the past ten years and included the years 2004-2014. These years were selected as previous research (Krezmien, 2007) has already analyzed articles from 1984-2004. This study proposed to extend the findings of this previous research. Terms selected for this search included the following: 1) school discipline and race 2) school discipline and school exclusion 3) school discipline and zero tolerance 4) school discipline and disability 5) school discipline and disproportionate 6) school discipline and bias 7) school discipline and expulsion 8) school discipline and referrals 9) school discipline and special education 10) suspension and race 11) suspension and school exclusion 12) suspension and zero tolerance 13) suspension and disability 14) suspension

and disproportionate 15) suspension and bias 16) suspension and expulsion 17) suspension and referrals and 18) suspension and special education. Three limits were placed on these searches using options available in the search engine: 1) Publication Years specified 2004 – 2014 2) a check was placed in the box to limit the search to peer reviewed studies, and 3) "quantitative study" was selected under methodology.

The first step I took after completing each search was a comparison of each search list to every other search list generated to determine how many unduplicated articles were found. I found a total of 881 articles in the original search. I then reviewed the title and abstract of each article to determine if the topic of the article was relevant to the topic of my study. My review eliminated 452 articles yielding 429 studies that could be potentially included in this review.

Criteria were then established for inclusion in this review. Articles were included that: 1) reported descriptive or quantitative data and 2) examined disproportionate suspension rates. The 429 studies whose subject was similar to this study were reviewed. The first step included a review of the article's literature review to determine if the author included a research question about disproportionate suspension rates. The second step included a review of the methodology to determine whether the method section included any indication that disproportionate suspension rates were reviewed. The final step included a review of the results section to determine whether the authors discussed disproportionate suspension rates amongst individuals in the sample anywhere in their results. The study was included in this review if the authors described disproportionate rates in any of these three areas. A review using this criteria identified 49 articles. These

articles were added to those previously identified by Krezmien (2007) which resulted in a total of 64 articles that were eligible for review.

A review of the 64 articles eliminated three articles for different reasons. Authors of one of the studies (Miller, Nevado-Montenegro, & Hinshaw, 2012) examined data drawn from a sample of individuals at pediatrician's offices. It was not included because it was not connected to the school environment. One article (Bauermeister et al., 2007) examined suspensions in Puerto Rico and was excluded from review. The third paper (Ward, Shelley, Kasse, & Pane, 2008) was excluded because the analyzed variables were not related to those required in this review. Sixty-one articles were included in this review.

Each of the sixty-one studies was categorized into one of four types of data sources: schools, school districts, states, or data from large scale extant databases. Seven studies examined school data, nineteen examined school district data, sixteen examined state data, and nineteen examined data from large scale extant databases. The structure of this paper will present findings and a review of methodology according to the type of data analyzed by each author.

Findings

This section examines the findings from the 61 studies selected for inclusion in this literature review. First, I describe information about the different studies included in this analysis. The major findings of each of these studies will then be presented according to five major categories: 1) race, 2) gender, 3) special education status, 4) socioeconomic status, and 5) other. A summary of the findings will be presented at the conclusion of each set of findings.

School Level

Seven of the sixty-one studies examined data at the school level. These seven studies were published between 1997 and 2002 and included samples of between 610 (Skiba et al., 1997) and 11,001 (Skiba et al., 2002) students. Samples were drawn from public schools within both urban and rural areas (Constenbader & Markson, 1998) and from various locations in the United States. Table 1 displays an overview of these studies, the sample composition, and the total number of students included in each study.

Table 1: School level studies.

Study	Sample	N
Constenbader & Markson, 1998	Urban and Rural Middle and High Schools	620 students in 4 schools
Kaplan & Cornell, 2005	Central Virginia	256 threat cases
Mattison & Aber, 2007	Mid-West University Town	1,686 students
Petras and colleagues, 2011	Baltimore City Public Schools	1,169 students
Shirley & Cornell, 2011	Public Middle School in Virginia	400 students
Skiba and colleagues, 2002	Public School	11,001 students
Skiba and colleagues, 1997-Study 2	One Middle School	610 students

District Level

Nineteen studies had authors who examined data taken from individual school districts. District level studies were published between 1992 (McFadden et al., 1992) and 2013 (Sullivan et al., 2013) and included data that was analyzed at the level of the 1) individual student (Anderson et al., 2007), 2) school (Bruns & Moore, 2005), and 3) disciplinary infractions (McFadden et al., 1992). A summary of the district level studies, a description of their sample, and the total number of individuals, schools, or cases studied is displayed in Table 2.

Table 2: District level studies.

Study	Sample	N
Anderson and colleagues, 2007	School District in Southeast United States	574 students
Arcia, 2007a	Large Urban District	26,137 students
Arcia, 2007b	Urban District in Southeast United States	69 schools
Blake and colleagues, 2011	School District in Midwest United States	9,364 female students
Bruns & Moore, 2005	Baltimore City School District, Maryland	82 schools
Butler and colleagues, 2012	Large, Urban, Midwest Public School	27,884 students
Fasko and colleagues, 1995	Students in a Public School District	3,019 students
Goran & Gage, 2011	Midwestern School District	142 students
Hinjosa, 2008	Large Urban District in Midwest	Unknown
Hoffman, 2014	Urban School District	577 students; 15 schools
McFadden and colleagues, 1992	Schools in South Florida	4,391 discipline files
Mendez & Knoff, 2003	School District in Florida	142 schools; 138,761 students
Mendez, 2003	Pinellas County School District	8,268 students
Mendez and colleagues, 2002	School District in Florida	Unknown
Nichols, 2004	Large Metropolitan City in Mid-West	37,000 students
Rouse and colleagues, 2011	Public City School District in Northeast	10,738 students
Skiba and colleagues, 1997-Study 1	Urban Midwest Public School District	11,001 students
Sullivan and colleagues, 2013	Urban School District in Wisconsin	17,837 students
Theriot and colleagues, 2010	School District in Southeast United States	9,706 students

State Level

Authors of sixteen articles analyzed state level data. These studies were published between 1995 (Cooley, 1995) and 2014 (Hemphill et al., 2014). A summary of the state level studies, including the total number of students, administrators, schools, or districts included in the study, and the state in which the study was conducted are displayed in Table 3.

Table 3: State level studies.

Study	Sample	N
Afinson and colleagues, 2010	Minnesota Public Schools	All Minnesota Students; 62 Individuals in Focus Group
Christle & Nelson, 2004	Middle Schools in Kentucky	161 Schools
Cooley, 1995	Administrators in Kansas	441 Administrators
Eitle & Eitle, 2004	Students in Public Middle and High Schools in Florida	728 Schools
Gregory and colleagues, 2011	High Schools in Virginia	199 Public Schools
Hemphill & Hargreaves, 2009	Students in Washington State and Victoria, Australia	1,957 students in Victoria; 1,942 students in Washington
Hemphill and colleagues, 2014	Students in Washington State and Victoria, Australia	1,957 students in Victoria; 1,942 students in Washington
Kinsler, 2011	Students in Grades 3-12 in North Carolina	46,619 Students
Krezmien and colleagues, 2006	Maryland Public Schools	All Maryland Students
Mcloughlin & Noltemeyer, 2010	School Districts in Ohio	346 Schools
Noltemeyer & Mcloughlin, 2010a	School Districts in Ohio	228 School Districts
Noltemeyer & Mcloughlin, 2010b	School Districts in Ohio	326 School Districts
Pei and colleagues, 2013	Louisiana Public Schools	877,238 Students
Rausch & Skiba, 2004	Students in Indiana	Unknown
Vincent and colleagues, 2012	Pacific Northwest	64,088 Students; 147,850 Disciplinary Infractions
Wang and colleagues, 2005	Students in Florida	5,178 in experimental; 5,178 in Control

Large Scale Databases

Authors of nineteen studies examined data from large scale extant databases. These studies were published between 2003 (Losen et al., 2003) and 2014 (Wei et al., 2014; Wright et al., 2014). The most common database from which data was drawn was the Special Education Elementary Longitudinal Study. This was utilized by authors of

six studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al., 2012; Wagner et al., 2005; Wei et al., 2014). Additionally, the School-Wide Information System was utilized by three authors (Skiba et al., 2011; Tobin & Vincent, 2011; Vincent & Tobin, 2011). Table 4 displays an overview of the study, the database utilized for data analysis, and the total number of individuals included in the sample.

Table 4: Studies that utilized large scale databases.

Study	Sample	N
Achilles and colleagues, 2007	Special Education Elementary Longitudinal Study	1,824 Students
Bowman-Perrot and colleagues, 2013	Special Education Elementary Longitudinal Study	2,597 Students
Duran and colleagues, 2013	Special Education Elementary Longitudinal Study	1,438 Students
Gage and colleagues, 2012	Special Education Elementary Longitudinal Study	1,081 Students
Davis Ganao and colleagues, 2013	National Survey of Adolescents	3,318 Students
Hannon and colleagues, 2013	National Longitudinal Study of Youth	Sample 1: 1,175 Individuals; Sample 2: 2,621 Individuals
Heard, 2007	Add Health Study	11,381 Students and Their Parents
Kaushal & Nepomnyaschy, 2009	Survey of Income and Program Participation	15,887 Students
Losen and colleagues, 2003	National Data Sample	Unknown
Skiba and colleagues, 2011	School-Wide Information System	272 K-6 Schools; 92 6-9 Schools
Smith-McKeever & Gao, 2010	National Longitudinal Study	2,300 Mothers and Their Children
Tobin & Vincent, 2011	School-Wide Information System	46 Schools; 32,694 Students
Vincent & Tobin, 2011	School-Wide Information System	77 Schools
Wagner and colleagues, 2005	National Longitudinal Transition Study- 2 and Special Education Elementary Longitudinal Study	2,158 Students
Wallace and colleagues, 2008	Michigan's Monitoring the Future Study	Approx. 74,000 Students
Wei and colleagues, 2014	Special Education Elementary Longitudinal Study	1,888 Students
Welch & Payne, 2012	National Study of Delinquency Prevention in Schools	221 Schools
Wright and colleagues, 2014	Early Childhood Longitudinal Study, Kindergarten Class of 1998-1999	4,101 Individuals
Zhang and colleagues, 2004	Annual Reports to Congress	All students with disabilities

The most common variables analyzed by the authors include race, gender, disability status, and socioeconomic status. The authors also reported findings that did not fit into one of these categories. This information is listed as "other" in this paper and in the tables. Tables 5 through 8 display the major findings presented in each of these articles.

Table 5: Variables examined by school level studies.

Study	Race	Gender	Disability Status	SES	Other
Constenbader & Markson, 1998	X	X			X
Kaplan & Cornell, 2005	X	X	X		X
Mattison & Aber, 2007	X	X			X
Petras and colleagues, 2011	X	X		X	X
Shirley & Cornell, 2011	X				X
Skiba and colleagues, 2002	X	X		X	
Skiba and colleagues, 1997- Study 2		X	X	X	

Table 6: Variables examined by district level studies.

Study	Race	Gender	Disability Status	SES	Other
Anderson and colleagues, 2007			X	X	X
Arcia, 2007a	X				X
Arcia, 2007b	X			X	X
Blake and colleagues, 2011	X				
Bruns & Moore, 2005	X			X	X
Butler and colleagues, 2012	X	X		X	X
Fasko and colleagues, 1995	X	X	X		X
Goran & Gage, 2011			X		X
Hinjosa, 2008	X	X			
Hoffman, 2014	X				X
McFadden and colleagues, 1992	X	X			
Mendez & Knoff, 2003	X	X			X
Mendez, 2003	X	X	X	X	
Mendez and colleagues, 2002	X			X	X
Nichols, 2004	X			X	
Rouse and colleagues, 2011	X	X		X	X
Skiba and colleagues, 1997-Study 1	X	X	X	X	
Sullivan and colleagues, 2013	X	X	X	X	
Theriot and colleagues, 2010	X			X	X

Table 7: Variables examined by state level studies.

Study	Race	Gender	Disability Status	SES	Other
Afinson and colleagues, 2010	X				
Christle & Nelson, 2004	X	X		X	X
Cooley, 1995	X	X	X		X
Eitle & Eitle, 2004	X				X
Gregory and colleagues, 2011	X			X	X
Hemphill & Hargreaves, 2009					X
Hemphill and colleagues, 2014		X		X	X
Kinsler, 2011	X				
Krezmien and colleagues, 2006	X		X		
Mcloughlin & Noltemeyer, 2010	X			X	
Noltemeyer & Mcloughlin, 2010a	X				
Noltemeyer & Mcloughlin, 2010b	X				
Pei and colleagues, 2013	X				
Rausch & Skiba, 2004	X				X
Vincent and colleagues, 2012	X		X		
Wang and colleagues, 2005					X

Table 8: Variables examined by studies utilizing large scale databases.

Study	Race	Gender	Disability Status	SES	Other
Achilles and colleagues, 2007	X	X	X	X	X
Bowman-Perrot and colleagues, 2013	X	X	X	X	X
Duran and colleagues, 2013	X	X	X	X	X
Gage and colleagues, 2012		X			
Davis Ganao and colleagues, 2013	X			X	X
Hannon and colleagues, 2013	X	X			X
Heard, 2007					X
Kaushal & Nepomnyaschy, 2009	X			X	X
Losen and colleagues, 2003	X				X
Skiba and colleagues, 2011	X				
Smith-McKeever & Gao, 2010	X			X	X
Tobin & Vincent, 2011	X				X
Vincent & Tobin, 2011	X				
Wagner and colleagues, 2005			X		
Wallace and colleagues, 2008	X	X			
Wei and colleagues, 2014			X		
Welch & Payne, 2012	X	X		X	X
Wright and colleagues, 2014	X	X			X
Zhang and colleauges, 2004	X		X		

Race

School Level. Authors of all but one (Skiba et al., 1997) of the seven articles included an examination of race as a predictor of school suspension. Authors of only one (Kaplan & Cornell, 2005) study that examined race found that race was not a predictive factor of school suspension. Authors of the remaining five articles (Costenbader & Markson, 1998; Mattison & Aber, 2007; Petras et al., 2011; Shirley & Cornell, 2011; Skiba et al., 2002) found that African American students were more likely to be suspended compared to White students. Authors of one study (Petras et al., 2011) found that African American students were 2.02 times as likely to be suspended compared to their White counterparts.

Group differences regarding the reasons that African American and White students were suspended from school was examined by authors in one study (Skiba et al., 2002). Results indicated that White students were more likely to be referred following instances of smoking, leaving without permission, vandalism, and obscene language, while Black students were more likely to be referred for disrespect, excessive noise, threats, and loitering (Skiba et al., 2002).

District Level. Authors of two articles (Anderson et al., 2007; Goran & Gage, 2011) did not include an investigation of racial disparities in suspension rates. Bruns and Moore (2005) reported that the percentage of individuals identified as the nonwhite population did not predict suspension rates, and authors of one study (Fasko et al., 1995) found that White students were disproportionately suspended compared to students from other racial groups. Butler and colleagues (2012) reported that being of an African American racial background correlated with a longer suspension at the elementary school level but not at the secondary level (Butler et al., 2012). The authors of the remaining papers (Arcia, 2007a; 2007b; Blake et al., 2011; Hinjosa, 2008; Hoffman, 2014; McFadden et al., 1992; Mendez, 2003; Mendez & Knoff, 2003; Mendez et al., 2002; Nichols, 2004; Rouse et al., 2011; Skiba et al., 1997; Sullivan et al., 2013; Theoriot et al., 2010) all reported that minority students were more likely to be suspended from school. Results consistently stated that Black students were two to three times as likely to be suspended compared to students from other racial groups (Arcia, 2007a; Blake et al., 2011; Hinjosa, 2008; Mendez & Knoff, 2003; Mendez et al., 2002; Nichols, 2004; Rouse et al., 2011). Authors of one study suggested that Black students were suspended at a rate of seven to one compared to students from other racial and ethnic backgrounds

(Hoffman, 2014). Skiba and colleagues (1997) reported that Native American students were more likely to be suspended from school. Authors reported mixed results for Hispanic students. McFadden and colleagues (1992) reported that Hispanic students were underrepresented in suspension rates while Rouse and colleagues (2011) reported that they were overrepresented. Asian and Pacific Islander students were reported to be suspended less frequently by authors of two studies (Rouse et al., 2011; Sullivan et al., 2013).

Arcia (2007b) reported that Black students were more likely to be suspended from schools in which there was a greater achievement gap between Black students and students of other races (Arcia, 2007b). Blake and colleagues (2012), in a study specific to female students, indicated that Black students were overrepresented in all types of infractions, with the exception of truancy, compared to their White counterparts. Black students were most often suspended for defiance, improper dress, and fighting with a student. Hispanic students were more likely than Black students to be cited for improper dress, truancy, disobedience, defiance, tardiness, and making a threat to another student.

State Level. Authors of all but three of the studies (Hemphill & Hargreaves, 2009, Hemphill, et al., 2014; Wang et al., 2005) reported rates of racial disproportionality. Mcloughlin and Noltemeyer (2010) were the only authors who reported that race was not a factor in disproportionate suspension rates.

Authors of eight studies (Afinson et al., 2010; Gregory et al, 2011; Krezmien et al, 2006; Noltemeyer & Mcloughlin, 2010a; Noltemeyer & Mcloughlin, 2010b; Pei et al., 2013; Rausch, & Skiba, 2004; Vincent et al., 2012) reported that students who were Black or African American were disproportionately suspended from school. Cooley

(1995) was the only author who reported that Black students were excluded proportionately. Kinsler (2011) reported that Black students were suspended from school longer than White students for a similar offense. For example, Kinsler (2011) found that Black students were suspended on average a full day longer for fighting compared to White students.

Authors of three studies (Afinson et al., 2010; Rausch & Skiba, 2004; Vincent et al., 2012) reported that Hispanic students were disproportionately suspended while authors of two studies (Cooley, 1995; Krezmien et al., 2006) reported that they were suspended proportionately to their representation in the sample. Native American and Alaska Natives were found to be overrepresented in suspensions by authors of two studies (Afinson et al., 2010; Rausch & Skiba, 2004), overrepresented amongst general education students yet underrepresented amongst special education students by authors in one study (Vincent et al., 2012), and proportionately represented by authors in another study (Krezmien et al., 2006). Asian or Pacific Islander students were consistently reported as underrepresented (Krezmien et al., 2006 Rausch & Skiba, 2004; Vincent et al., 2012), while White students were reported as underrepresented (Vincent et al., 2012) or proportionately represented (Cooley, 1995) in school suspension rates.

Authors of two studies (Afinson et al., 2010; Krezmien et al., 2006) reported that suspension rates for Native American / Alaska Natives have increased over time. The rate for African American students was reported to be increasing by the authors of one study (Krezmien et al., 2006) yet decreasing over time by authors of another study (Noltemeyer & Mcloughlin, 2010b). Noltemeyer and Mcloughlin (2010b) reported that the rate of White students being suspended was increasing over time.

Eitle and Eitle (2004) examined whether the size of the Black population influenced suspension rates for Black students and found that it was not the size of the Black population that mattered but how segregated the school district was that mattered. These authors reported that schools located in segregated districts had lower racial imbalances in suspension rates between Black and White students compared to less segregated schools. Gregory and colleagues (2011) reported that schools with a greater proportion of Black students had higher rates of Black suspension. Noltemeyer and Mcloughlin (2010b) reported that rates of disproportionality were greatest in major urban areas, while schools located in rural, agricultural communities with low poverty and a low to moderate family income had the lowest rates of disproportionality. Schools that had more experienced and educated faculty members also had greater racial imbalances (Eitle & Eitle, 2004). Higher racial disproportionality was also found in school that had weaker attachment and commitment to students.

Large Scale Databases. Authors of all but four (Gage et al., 2012; Heard, 2007; Wagner et al., 2005; Wei et al., 2014) of the studies that examined data from large scale databases examined race as a variable. Authors of three studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013) examined data from the Special Education Elementary Longitudinal Study and reported that African American students were more likely to be suspended compared to White students. Authors of three studies (Skiba et al., 2011; Tobin & Vincent, 2011; Vincent & Tobin, 2011) examined data from the School-Wide Information System and reported that African American students were overrepresented in suspensions compared to White students. Tobin and Vincent (2011) suggested that African American students may be 3.11 times more likely to be suspended

compared to White students. Skiba and colleagues (2011) reported that Latino students were overrepresented in suspensions and expulsions relative to White students. Vincent and Tobin (2011) reported that Hispanic and White students were both underrepresented in long term exclusions.

Authors of six studies (Kaushal & Nepomnyaschy, 2009; Wallace et al., 2008; Welch & Payne, 2012; Wright et al., 2014; Zhang et al., 2004) reported that Black students were overrepresented in rates of in school suspension, while the authors of one study (Welch & Payne, 2012) reported that they were overrepresented in expulsions (Welch & Payne, 2012). Losen and colleagues (2003) reported that the rates of Black students being suspended from school have increased between 1973 and 2001 (Losen et al., 2003).

Hannon and colleagues (2013) examined skin tone of African American students and the role that this plays in suspensions and found that female students with the darkest skin tone were between 2.2 and 3.4 times more likely to be suspended from school compared to those with the lightest skin tone. Results from one group of male students suggested that those with the darkest skin tone were 2.5 times more likely to be suspended while another group of male students did not show statistically significant differences based on shade of skin tone (Hannon et al., 2013).

Results for Hispanic students were mixed with some studies suggesting that Hispanic students were more likely to be suspended (Wallace et al, 2008; Zhang et al., 2004) and expelled (Welch & Payne, 2012) and that their rate of suspension was increasing over time (Losen et al., 2003). Authors of another study (Kaushal & Nepomnyaschy, 2009) reported that Hispanic students were no more likely to be

suspended from school. Wallace and colleagues (2008) and Zhang and colleagues (2004) reported that American Indian students were more likely to be suspended, and Losen and colleagues (2003) found that the rate at which American Indian students were suspended has increased over time. Both Asian (Wallace et al, 2008) and White (Smith-McKeever & Gao, 2010) students were reported to be suspended least frequently by authors of two different studies.

Davis Ganao and colleagues (2013) reported that for both Black and White students their own delinquency and their friend's delinquency correlated with an increased risk of suspension. Coming from a home where physical abuse and alcohol abuse was present was an additional risk factor for White students (Davis Ganao et al., 2013).

Summary. Fifty-one out of sixty-one studies had authors who examined race and the role it plays in suspension rates. Authors of forty-eight of the fifty-one studies reviewed found racial differences in suspension rates. Most authors reported that African American or Black students were suspended most frequently compared to students of other racial backgrounds. There was also a trend for Native American or Alaska Natives to be suspended more frequently. Asian American and White students were typically underrepresented in school suspensions. The results for Hispanic students were mixed as some authors reported that they were overrepresented or underrepresented in suspensions or suspended at a rate comparable to their peers.

Gender

School Level. Authors of all but one (Shirley and Cornell, 2011) of the articles examined gender differences found in suspension rates. Authors of five (Constenbader &

Markson, 1998; Mattison & Aber, 2007; Petras et al., 2011; Skiba et al., 2002; Skiba et al., 1997) out of the six studies reported statistically significant differences in suspension rates based on gender with male students being suspended more than female students. Petras and colleagues (2011) reported that males were suspended starting at an earlier age. Kaplan and Cornell (2005) reported no differences in suspension rates between male and female students.

Authors of one study (Petras et al., 2011) claimed that gender, combined with the classroom environment, may interact to influence suspension rates. The authors found that students who were most at risk for suspension were those who were in classrooms that had lower instances of aggressive behavior. Students in classrooms that had more aggressive acts were not as likely to be suspended. It was suggested that when students engaged in aggressive behavior, in a situation where aggressive behavior was not the norm, they were more vulnerable to suspension.

District Level. Authors of nine (Butler et al., 2012; Fasko et al., 1995; Hinjosa, 2008; McFadden et al., 1992; Mendez, 2003; Mendez & Knoff, 2003; Rouse et al., 2011; Skiba et al., 1997; Sullivan et al., 2013) of the nineteen district level articles examined gender differences in suspension rates. The majority of authors (Hinjosa, 2008; McFadden et al., 1992; Mendez, 2003; Mendez & Knoff, 2003; Rouse et al., 2011; Skiba et al., 1997; Sullivan et al., 2013) reported that males were more likely to be suspended from school. Rouse and colleagues (2011) reported that males were 4.22 times as likely to be suspended from school compared to females. Butler and colleagues (2012) were the only authors to find that males were less likely to be suspended from school. Fasko and colleagues (1995) reported that males were not disproportionately suspended.

State Level. Authors of three (Christle & Nelson, 2004; Cooley, 1995; Hemphill et al., 2014) of the sixteen studies that examined state level data included an analysis based on gender. Cooley (1995) reported that male students were more likely to be suspended than female students, while Christle and Nelson (2004) reported that gender and suspension were not related (Christle & Nelson, 2004). Hemphill et al. (2014) examined gender differences in suspension between students suspended in the United States and Australia. The authors of this study found that male students in the United States were suspended more frequently than their Australian counterparts; there were no differences in suspension rates for females.

Large Scale Databases. Authors of eight (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al., 2012; Hannon et al., 2013; Wallace et al., 2008; Welch & Payne, 2012; Wright et al., 2014) out of the eighteen studies examined gender disproportionalities in school exclusion. Welch and Payne (2012) reported that the percentage of males in the school was not linked to an increased risk of in and out of school suspension and expulsion. Wallace and colleagues (2008) found that females of African American, Hispanic, and American Indian ethnicity were more likely than their male counterparts to be suspended from school; both male and female Asian students were equally likely to be suspended. The authors of the remaining studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al., 2012; Hannon et al., 2013; Wright et al., 2014) reported that males were more likely than females to be suspended.

Summary. Authors of nineteen studies reported that males were disproportionately suspended from school compared to female students. Authors of four

studies indicated that neither male nor female students were disproportionately suspended. Authors of one study stated that females were suspended more frequently than males, and authors of one study stated that males were less likely to be suspended.

Special Education Status

School Level. Authors of two (Kaplan & Cornell, 2005; Skiba et al., 1997) of the seven articles examined disability status and its influence on school suspension rates. Skiba and colleagues (1997) reported that students receiving special education services were more likely to be suspended. Kaplan & Cornell (2005) found no differences in suspension rates between students in general education and those receiving special education services. Kaplan and Cornell (2005) found that there were no differences in the length of suspension between students in general and special education.

District Level. Authors of six (Anderson et al., 2007; Fasko et al., 1995; Goran & Gage, 2011; Mendez, 2003; Skiba et al., 1997; Sullivan et al., 2013) district level studies examined disability status as a predictor of suspensions. All of these authors reported that students with disabilities were more likely to be suspended. Sullivan and colleagues (2013) reported that students with disabilities were 19% more likely to be suspended from school and were 70% more likely to receive multiple school suspensions. Of the disability categories, students with emotional disabilities were consistently reported to be those most likely to be suspended from school (Goran & Gage, 2011; Skiba et al., 1997).

State Level. Authors of three studies (Cooley 1995; Krezmien et al., 2006; Vincent et al., 2012) examined disproportionality based on disability status. All of these authors found that students with disabilities were more likely to be suspended compared

to students without disabilities. Cooley (1995) reported that students with disabilities were more than twice as likely to be suspended compared to students without disabilities. Krezmien and colleagues (2006) and Cooley (1995) both reported that students with emotional disabilities made up the majority of school suspensions. Students with learning disabilities (Cooley, 1995; Krezmien, 2006) and an other health impairment (Krezmien et al., 2006) were also more likely to be suspended.

Large Scale Databases. Authors of six (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Wagner et al., 2005; Wei et al., 2014; Zhang et al., 2004) of the eighteen studies that utilized data from large scale databases included an examination of disproportionate suspension rates based on special education status. Authors of all of these studies utilized data from the Special Education Elementary Longitudinal Study, with the exception of Zhang and colleagues (2004). Authors of one article (Wagner et al., 2005) combined data from the Special Education Elementary Longitudinal Study and the National Longitudinal Transition Study- 2. Authors of three articles (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013) that utilized data from the Special Education Elementary Longitudinal Study reported that children with a disability classification of an emotional or behavioral disability or Attention Deficit / Hyperactivity Disorder were more likely to be excluded compared to students with a learning disability classification. Zhang and colleagues (2004) found that students with emotional disabilities were suspended more frequently than students with other disabilities. Achilles and colleagues (2007) reported that once family structure and socioeconomic status were controlled for, African American students with an emotional or behavioral disability classification and Hispanic students with a learning disability classification

were no longer suspended from school at a disproportionate rate. Zhang and colleagues (2004) found that students who had an emotional disability and were also African American were suspended from school at twice the rate of their peers.

Authors of two of the studies (Wagner et al., 2005; Wei et al., 2014) examined data relative to students with emotional disabilities. Wagner and colleagues (2005) reported that at the elementary level, students with emotional disabilities were suspended at four times the rate of students with other disabilities. At the secondary school level, 72.9% of students with an emotional disability reported being suspended from school compared to 27.6% of students with other disabilities (Wagner et al., 2005). Students who had emotional disabilities and co-morbid Attention Deficit / Hyperactivity Disorder were suspended at a higher rate than students with only emotional disabilities (Wei et al., 2014).

Summary. Authors of all but one study that examined disproportionate suspension rates based on special education status found that students with disabilities were disproportionately suspended compared to general education students. It was also reported by the majority of authors that students with emotional disabilities were suspended from school most frequently.

Socioeconomic Status

School Level. Authors of three (Petras et al., 2011; Skiba et al., 2002; Skiba et al., 1997) of the seven articles examined the impact of socio-economic status on suspension rates. Results were mixed regarding the impact that socioeconomic status had on suspension. Authors of one article (Skiba et al., 2002) found that socioeconomic status did not impact school suspension rates. Authors of the other two articles (Petras et al.,

2011; Skiba et al., 1997) found that students from lower socioeconomic statuses were more likely to be suspended compared to students from higher socioeconomic statuses. Petras and colleagues (2011) found that students receiving free and reduced lunch were 1.68 times as likely to be suspended from school compared to students who did not receive free or reduced lunch (Petras et al., 2011).

District Level. Authors of eight (Arcia, 2007b; Anderson et al., 2007; Bruns & Moore, 2005; Mendez, 2003; Mendez et al., 2002; Nichols, 2004; Skiba et al., 1997; Rouse et al., 2011; Sullivan et al., 2013; Theriot et al., 2010) of the nineteen district level studies examined socioeconomic status. Receiving free or reduced lunch (Mendez et al., 2002; Nichols, 2004; Skiba et al., 1997; Sullivan et al., 2013; Theriot et al., 2010), living in poverty (Rouse et al., 2011) or being poor (Mendez, 2003) was associated with a greater likelihood of school suspension by authors of these article. Authors of other studies reported that receiving free or reduced lunch (Arcia, 2007b, Anderson et al., 2007), socioeconomic status (Butler et al., 2012), or poverty (Bruns & Moore, 2005) did not influence suspension rates.

State Level. Authors of four studies (Christle & Nelson, 2004; Gregory et al., 2011; Hemphill et al., 2014; Mcloughlin & Noltemeyer, 2010) examined socioeconomic status and its impact on disproportionate suspension rates. Authors of two studies (Christle & Nelson, 2004; Gregory et al., 2011) reported that schools with higher rates of lower socioeconomic students had increased rates of suspension. Author of one study (Mcloughlin & Noltemeyer, 2010) reported that economic disadvantage predicted disproportionate suspension rates. Hemphill and colleagues (2014) reported that students who lived in a family that was receiving welfare predicted higher rates of suspension.

Large Scale Databases. Authors of seven studies (Achilles et al., 2007; Bowman-Perrot, et al., 2013; Duran et al., 2013; Davis Ganao et al., 2013; Kaushal & Nepomnyaschy, 2009; Smith-McKeever & Gao, 2010; Welch & Payne, 2012) examined socioeconomic status and the role it plays in disproportionate suspension rates. Authors of three studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013) utilized data from the Special Educational Elementary Longitudinal Study. These authors reported that students who fell within the high risk socioeconomic status group, which was defined as living in poverty, receiving assistance from the federal benefit program, and the education level of the head of the household, was associated with an increased risk of exclusion from school. Duran and colleagues (2013) stated that a lower family income was associated with a higher probability of being excluded from school. Bowman-Perrot and colleagues (2013) reported that low socioeconomic status was linked to an increased likelihood of exclusion. The authors questioned the meaningfulness of this statistic given the small effect size noted for this variable.

Kaushal and Nepomnyaschy (2009) reported that an increased income was negatively associated with suspension and expulsion, and Smith-McKeever and Gao (2010) reported that families that made over $15,000 were less likely to have children who were suspended from school. Welch and Payne (2012) reported that the percentage of students receiving free and reduced lunch was linked to an increased risk of expulsion; it was not related to in school or out of school suspension. Davis Ganao and colleagues (2013) reported that for White students, a lower family income was related to an increased risk for suspension. This same risk was not present for Black students.

Summary. Authors of thirteen studies reported that students from lower socioeconomic status backgrounds were disproportionately suspended compared to their peers while authors of six studies reported that students were not suspended disproportionately based on socio-economic status. Authors of one study found that a lower socioeconomic status influenced the suspension rates for White students. Authors of two studies reported that having a higher income served as a protective factor from suspension.

Other Findings

School Level. Authors of five (Constenbader & Markson, 1998; Kaplan & Cornell, 2005; Mattison & Aber, 2007; Petras et al., 2011; Shirley & Cornell, 2011) of the seven articles included other findings related to school, personal, or home factors.

According to authors of two studies (Costenbader & Markson, 1998; Mattison & Aber, 2007) school factors can influence suspension rates. Mattison and Aber (2007) reported that students who had a positive perception of school were less likely to be suspended from school compared to students who had a negative perception of school. Students who experienced higher levels of racism at school were more likely to be suspended compared to students who reported less experiences with racism (Mattison & Aber, 2007). Constenbader and Markson (1998) found that students who were suspended from school were more likely to report a lower interest in school and to report more instances of failure to follow the school rules. They also found that students from rural schools were suspended more often for nonviolent behavior and talking back compared to students from urban schools (Constenbader & Markson, 1998).

Authors of one study (Kaplan & Cornell, 2005) found that students were more likely to be suspended as they progressed through their education. Students who were older for their grade level were suspended more frequently at a younger age. Petras and colleagues (2011) reported that students who were older than age six by the fall of first grade were more likely to be suspended during their academic career. Students who endorsed statements related to higher positive attitudes toward aggression were more likely to be suspended from school (Shirley & Cornell, 2011).

District Level. Authors of twelve articles reported additional findings that are relevant to this issue. These factors included an examination of school (Anderson et al., 2007; Arcia, 2007a, 2007b; Bruns & Moore, 2005; Butler et al., 2012; Fasko et al., 1995; Goran & Gage, 2011; Hoffman, 2014; Mendez, & Knoff, 2003; Mendez et al., 2002; Theriot et al., 2010) and family (Mendez et al., 2002; Rouse et al., 2011) factors.

Hoffman (2014) reported that two years prior to the enactment of zero tolerance policies, 197 students in his sample were recommended for expulsion from school. This number increased to 380 students being recommended for expulsion two years after the enactment of zero tolerance policies. Authors also reported that students were more likely to be suspended at the secondary level (Butler et al., 2012). Mendez and Knoff (2003) reported that more students were suspended at the middle school level, while Arcia (2007b) and Fasko and colleagues (1995) reported that more suspensions took place at the high school level. Mendez and colleagues (2002) reported that while only 3.36% of elementary school children were suspended, 24.41% of middle school and 18.46% of high school children reported being suspended from school. The likelihood of future suspension increased following the initial suspension from school (Anderson et al.,

2007; Arcia, 2007a; Theriot et al., 2010). Common reasons for suspension at the middle school level included violence against another person and disobedience, while high school students were suspended for violence against property, substance violation, or absenteeism (Mendez & Knoff, 2003).

Academic achievement scores served as a buffer from suspension. Students who scored better on reading (Arcia, 2007a; Mendez et al., 2002), writing, and math achievement (Mendez et al., 2002) and who had better language skills (Goran & Gage, 2011) were less likely to be suspended from school. Schools with higher attendance rates and larger schools had lower rates of out of school suspension (Bruns & Moore, 2005).

Family factors associated with suspension included: low maternal education, having a teenage mother, and homelessness (Rouse et al., 2011). Mobility was associated with an increased risk of suspension (Mendez et al., 2002).

State Level. Authors of eight articles (Christle & Nelson, 2004; Cooley, 1995; Eitle & Eitle, 2004; Gregory et al., 2011; Hemphill & Hargreaves, 2009; Hemphill et al., 2014; Rausch & Skiba, 2004; Wang et al., 2005) described other factors that relate to disproportionate suspension rates. These authors examined school (Christle & Nelson, 2004; Cooley, 1995; Eitle & Eitle, 2004; Gregory et al., 2011; Rausch & Skiba, 2004) or student (Hemphill & Hargreaves, 2009; Hemphill et al., 2014; Wang et al., 2005) factors as they related to this topic.

Authors of two studies (Eitle & Eitle, 2004; Rausch & Skiba, 2004) reported that middle schools suspend the most students. Author of one study (Rausch & Skiba, 2004) suggested that middle schools suspend 23.95 per 100 students. High schools reportedly suspended 21.4 per 100 students, and elementary schools suspended 5.06 per 100

students (Rausch & Skiba, 2004). Cooley (1995) reported that school size did not have an influence on suspension rates. Gregory and colleagues (2011) reported that larger schools had lower suspension rates. Gregory and colleagues (2011) and Rausch and Skiba (2004) reported that the location of the school can influence suspension rates. Gregory and colleagues (2011) reported that urban districts had fewer suspensions, while Rausch and Skiba (2004) reported that urban districts were noted to suspend the most students (24.86 per 100 students). Rausch and Skiba (2004) reported the following rates: suburban schools (13.31 per 100 students), town schools (11.56 per 100 students), and rural schools (5.06 per 100 students).

Academic achievement (Christle & Nelson, 2004; Rausch & Skiba, 2004) and the pressure to do well academically (Gregory et al., 2011) was associated with decreased suspension rates and fewer instances of disproportionate suspensions based on factors such as race (Eitle & Eitle, 2004). Schools with higher retention and dropout rates, more board of education violations, and lower school attendance also had higher suspension rates (Christle & Nelson, 2004).

Student factors were related to whether or not students were more likely to be suspended from school. Students engaged in delinquent, antisocial, and violent behaviors were more likely to receive both in and out of school suspensions compared to students who did not engage in these behaviors (Hemphill & Hargreaves, 2009; Hemphill et al., 2014; Wang et al., 2005). Higher instances of rebelliousness, low school commitment, and academic failure were related to increased suspension rates (Hemphill et al., 2014).

Large Scale Databases. Authors of all but six articles (Gage et al., 2012; Skiba et al., 2011; Vincent & Tobin, 2011; Wagner et al., 2005; Wallace et al., 2008; Wei et al.,

2014) presented additional findings. These factors were grouped into school (Achilles et al., 2007; Losen et al., 2003; Tobin & Vincent, 2011; Welch & Payne, 2012; Wright et al., 2014), student (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Hannon et al., 2013; Kaushal & Nepomnyaschy, 2009; Wright et al., 2014), and family (Bowman-Perrot et al., 2013; Davis Ganao et al., 2013; Heard, 2007; Kaushal & Nepomnyaschy, 2009; Smith-McKeever & Gao, 2010) factors that affect school exclusionary practices.

Losen and colleagues (2003) reported that states who had higher teacher quality and larger numbers of teachers teaching in their field had lower rates of suspension and expulsion. When teachers held a positive view of the administration in the school (Welch & Payne, 2012) and parents had greater satisfaction with the school (Achilles et al., 2007; Wright et al., 2014) schools had lower rates of suspension. Schools with higher achievement test scores in fourth and eighth grade had lower suspension and expulsion rates (Losen et al., 2003). Schools in urban environment had an increased risk for suspension (Achilles et al., 2007). Schools with behavioral intervention programs, such as positive behavior support systems, had lower rates of suspension (Tobin & Vincent, 2011).

Authors reported that student factors served as risk or protective factors against school exclusion. Authors reported that students who were socially well adjusted were least likely to be excluded (Bowman-Perrot et al., 2013) compared to students who had fewer social skills (Duran et al., 2013) and were at risk for delinquent behavior (Hannon et al., 2013; Wright et al., 2014). Older students (Bowman-Perrot et al., 2013; Duran et al., 2013; Kaushal & Nepomnyaschy, 2009) and those with lower test scores (Wright et

al., 2014) were noted to be at an increased risk for suspension while having higher test scores decreased a student's risk of suspension (Hannon et al., 2013). Students who had multiple school changes and who were involved in athletics were also at an increased risk for school exclusion (Achilles et al., 2007).

Family structure influenced suspension rates. Students who lived in two parent homes (Kaushal & Nepomnyaschy, 2009) and with their natural parents (Ganao et al., 2013) were least likely to be suspended from school while students who did not live in two parent homes (Bowman-Perrot et al., 2013) or whose parents showed more concerns about family disruption (Davis Ganao et al., 2013) were at an increased risk for school exclusion. Changes in family structure placed students at risk for school suspension or expulsion (Heard, 2007). Students were at an increased risk for suspension and expulsion from school when their mother changed early in life and when their mother and stepfather lived together (Heard, 2007).

A variety of other family factors were examined in these studies. Students whose mothers had higher scores on measures of depression, used marijuana, had been charged with an illegal act, were younger, or never married were more likely to be suspended from school (Smith-McKeever & Gao, 2010). Family alcohol abuse placed children at an increased risk for school suspension (Davis Ganao et al., 2013) Children whose mothers had less than a high school diploma were more likely to be suspended from school (Smith-McKeever & Gao, 2010), whereas children whose parents were more educated were less likely to be suspended from school (Kaushal & Nepomnyaschy, 2009). Bowman-Perrot and colleagues (2013) reported that students whose parents were more involved in school had a higher probability of being suspended from school. Parent

concerns about the quality of education their children received, neighborhood safety, community problems, crime exposure, violent crime, drug use, and gangs were risk factors for increased school suspension (Davis Ganao et al., 2013).

Summary. Authors of twenty-three studies reported on school factors that influence suspension rates. These studies found that zero tolerance policies have increased the rate of school suspensions and that school suspensions increased as a child progresses throughout his education. Most suspensions occurred at the secondary school level. Some evidence suggested that suspensions peaked during the middle school years while other evidence pointed to a peak during the high school years. Once a student received one suspension there was a greater likelihood of that student continuing to receive future suspensions. Schools with high academic achievement and attendance rates acted as a protective factor against school suspensions. Suspension rates were higher in schools with lower attendance, higher rates of retention, and high dropout rates.

Authors of twelve articles examined student factors that influence suspension rates. Authors reported that students who were older, older for their grade, less committed to school, and who had lower achievement scores had increased rates of suspension. Delinquency, antisocial behavior, positive attitudes toward aggression, and rebelliousness also placed student at-risk for suspension. Students who were socially well adjusted tended to have fewer suspensions.

Authors of seven studies examined family factors that influence suspension rates. Authors reported that low maternal education, homelessness, mobility, and family disruption predicted a higher probability of suspension. Parents who were concerned about their neighborhood and community and who reported problems with alcohol,

drugs, and gangs had students who were more likely to be suspended. Students who came from two parents homes, who lived with their natural parents, and who had more educated parents tended to be suspended less frequently from school.

Methodological Review

In addition to a discussion of the results of these studies, it is critical to review the methodological rigor of the studies in order to understand the quality of the research that has been completed on disproportionate suspension rates. The Council for Exceptional Children developed guidelines for special education research in 2005. These guidelines described general principals about special education research (Odom et al., 2005), quality indicators of experimental and quasi-experimental research (Gersten et al., 2005), and indicators for correlational research (Thompson, Diamond, McWillian, Snyder, & Snyder, 2005). These articles established quality indicators for: 1) conducting correlational research, 2) purpose and rationale, 3) sample size, 4) sample description, 5) data collection, 6) variables, and 7) statistical treatment. I will review all of the studies using these standards.

In each of the sections, I start by first providing a description of the standards that articles must meet according to these guidelines. I will then provide an interpretation as to whether the indicators were met by each author. Each section will conclude with an overall summary of the findings from that particular area.

Purpose, Rationale, and Research Questions

A study will have no impact on the field of special education without a conceptual understanding of the research design (Gersten et al. 2005). Gersten and colleagues (2005) provided quality indicators for authors of special education research that should be

followed when establishing the conceptual framework for a study. Four indicators should be addressed by all authors: 1) A case was made for the importance of the research 2) The scope of existing research was reflected in the article 3) Authors stated the conceptualization when an innovative approach was used and 4) Research questions and hypotheses were clearly stated. I reviewed each of the sixty-one articles to determine whether these standards were met.

School Level. Authors of all seven school level studies stated a research purpose and rationale that was based on a review of literature. Table 9 displays the purpose of each article.

Table 9: Purpose of school level studies.

Study	Purpose
Constenbader & Markson, 1998	Investigated important variables associated with the population of students who have been suspended and perceptions of events.
Kaplan & Cornell, 2005	Examined differences in threat assessment and disciplinary consequences between students receiving special education and general education
Mattison & Aber, 2007	Examined perceived racial climate and how it influenced student outcomes
Petras and colleagues, 2011	Examined the relationship between individual and contextual factors and grade level at the time of first school removal
Shirley & Cornell, 2011	Examined whether racial differences in suspension and discipline referrals were explained by student perceptions of availability of help at school, prevalence of bullying, and student attitudes toward aggression
Skiba and colleagues, 2002	Explored the extent to which racial and gender referrals may be linked to bias
Skiba and colleagues, 1997- Study 2	Examined referrals and suspensions in one middle school according to demographic factors

Authors of three of the articles (Kaplan & Cornell, 2005; Skiba et al., 2002; Skiba et al., 1997) included adequate descriptions of the research question. One example of an

adequate research question was: “Do students in special education receive different disciplinary consequences for their threats?” (Kaplan & Cornell, 2005, p. 109). Two of the studies (Mattison & Aber, 2007; Petras et al., 2011) included a research hypothesis. An example of an adequate hypothesis was: “African Americans and males will report lower grades and higher rates of suspension and detention than Whites and females, respectively” (Mattison & Aber, 2007, p. 4). The remaining school level studies lacked both research questions and hypotheses (Constenbader & Markson, 1998; Shirley & Cornell, 2011).

Table 10 displays the findings from this section.

Table 10: Summary of research basis for school level studies.

Study	Purpose	Questions	Hypotheses	Rationale
Constenbader & Markson, 1998	X			X
Kaplan & Cornell, 2005	X	X		X
Mattison & Aber, 2007	X		X	X
Petras and colleagues, 2011	X		X	X
Shirley & Cornell, 2011	X			X
Skiba and colleagues, 2002	X	X		X
Skiba and colleagues 1997- Study 2	X	X		X

District Level. Authors of all eighteen district level studies identified a purpose and rationale that was based on a review of the literature. A summary of the research purpose described by each author is displayed in Table 11.

Table 11: Purpose of district level studies.

Study	Purpose
Anderson and colleagues, 2007	Examined the impact of reading achievement scores, disability status, lunch status, and previous suspensions on school suspension
Arcia, 2007a	Examined student and grade level factors that influence student suspension
Arcia, 2007b	Examined student, school, and community factors that explain variability in suspension rates for Black students
Blake and colleagues, 2011	Explored disciplinary experiences of Black females
Bruns & Moore, 2005	Investigated whether presence of school-based mental health services in an urban school district was associated with suspension rates
Butler and colleagues, 2012	Investigated disproportionate trends in disciplinary practices while considering race, gender, SES, school level, and behavior role; Examined the correlation between race, SES, and the number of days suspended
Fasko and colleagues, 1995	Examined differences in suspension rates of a school district in Eastern Kentucky by gender, race, disability, and school level
Goran & Gage, 2011	Examined the relationship between language, history of suspension, academic and cognitive constructs, and overall school performance for students with ED and LD
Hinjosa, 2008	Examined racial differences in the probability of suspension and examined how student demographic variables and beliefs about teachers predict likelihood of suspension
Hoffman, 2014	Examined racial differences in student suspension and expulsion following the expansion of zero tolerance policies in an urban district in September of 2007
McFadden and colleagues, 1992	Assessed race and gender differences in the occurrence and treatment of school children's a) rates of referrals, b) types of violations, c) types of punishments
Mendez & Knoff, 2003	Examined out-of-school suspensions by race, gender, school level, and infraction type
Mendez, 2003	Examined a) characteristics of students with differing rates of suspensions, b) elementary predictors for students who receive suspensions, c) how number of 6th grade suspensions lead to later school outcomes
Mendez and colleagues, 2002	Examined out of school suspensions in a large diverse school district using quantitative and qualitative measures.
Nichols, 2004	Provided follow-up to an earlier study completed in a school district by the same author (1999). Racial disparities were found previously in the school district and questions whether suspensions were racial motivated were raised. This study wanted to further examine this issue.
Rouse and colleagues, 2011	Examined risk factors associated with academic and behavioral outcomes for students
Skiba and colleagues, 1997- Study 1	Examined disproportional representation of youth in disciplinary referrals and suspensions
Sullivan and colleagues, 2013	Examined how student sociodemographic and school variables predict repeated suspensions
Theriot and colleagues, 2010	Examined how school environment effects school exclusion

Authors of nine studies (Anderson et al., 2007; Arcia, 2007a; Bruns & Moore, 2005; Hinjosa, 2008; Hoffman, 2014; Mendez, 2003; Mendez & Knoff, 2003; Nichols, 2004; Skiba et al., 1997) provided clear research questions to guide their research. Anderson and colleagues (2007) stated the following research question, "Does reading achievement predict suspension amongst African American males in middle school?" (p. 49). This was considered to be a clear research question. Authors of three articles (Goran & Gage, 2011; Hoffman, 2014; Rouse et al., 2011) identified research hypotheses. Goran and Gage (2011) developed this hypothesis to guide their research: "Students (with ED and LD) with greater language deficits will have more incidence of suspension" (p. 473). This hypothesis met the quality indicators.

Table 12 displays the findings from this section.

Table 12: Summary of research basis for district level studies.

Study	Purpose	Questions	Hypotheses	Rationale
Anderson and colleagues, 2007	X	X		X
Arcia, 2007a	X	X		X
Arcia, 2007b	X			X
Blake and colleagues, 2011	X			X
Bruns & Moore, 2005	X	X		X
Butler and colleagues, 2012	X			X
Fasko and colleagues, 1995	X			X
Goran & Gage, 2011	X		X	X
Hinjosa, 2008	X	X		X
Hoffman, 2014	X	X	X	X
McFadden and colleagues, 1992	X			X
Mendez & Knoff, 2003	X	X		X
Mendez, 2003	X	X		X
Mendez and colleagues, 2002	X			X
Nichols, 2004	X	X		X
Rouse and colleagues, 2011	X		X	X
Skiba and collagues, 1997- Study 1	X	X		X
Sullivan and colleagues, 2013	X			X
Theriot and colleagues, 2010	X			X

State Level. Authors of all sixteen state level studies provided a purpose and rationale for their research. Table 13 displays the research purpose that was articulated in each of the research studies.

Table 13: Purpose of state level studies.

Study	Purpose
Afinson and colleagues, 2010	Minnesota Department of Education received a grant to examine factors that contributed to African American / Black, Hispanic, and American Indian students and students with disabilities leaving school before earning a diploma
Christle & Nelson, 2004	Examined suspension rates in Kentucky Middle Schools
Cooley, 1995	Examined whether acts leading to suspension or expulsion were different for students with disabilities compared to other students
Eitle & Eitle, 2004	Investigated whether the overrepresentation of Black student suspended was a form of school district segregation in the presence of school and residential factors; Wanted to examine whether school suspension was a form of resegregation or inequality.
Gregory and colleagues, 2011	Examined whether structure and support were associated with lower suspension rates for Black and White students
Hemphill & Hargreaves, 2009	Summarized the results of the International Youth Development Study which examined how student suspensions influence student behavior
Hemphill and colleagues, 2014	Examined student and school factors related to suspension and investigated differences in suspension between two states
Kinsler, 2011	Examined cross-school variations in punishments students received for disciplinary infractions
Krezmien and colleagues, 2006	Examined statewide trends in: school suspension practices, changes in suspension rates, and disproportionate suspension of minority students and students with disabilities
Mcloughlin & Noltemeyer, 2010	Determined which variables predict suspension usage and disproportionality in major urban, high poverty schools
Noltemeyer & Mcloughlin, 2010a	Examined changes in disproportionality of suspension over time and forms of discipline in schools other than suspension
Noltemeyer & Mcloughlin, 2010b	Examined whether significant differences exist between White and African American exclusionary rates when controlling for poverty, school typologies, and whether there was an interaction between ethnicity and typology when controlling for poverty
Pei and colleagues, 2013	Investigated whether the ethnic diversity of schools affects student behavior
Rausch & Skiba, 2004	Described trends in one state for out of school suspension and expulsion during 2002-2003 school year.
Vincent and colleagues, 2012	Stated that most of the literature on disproportionate discipline outcomes focuses on African-American and Hispanic students but need to focus on other races such as American Indian and Alaska Native
Wang and colleagues, 2005	Examined educational deficiencies in students identified as delinquents compared to students not identified as delinquents

Authors of seven studies (Eitle & Eitle, 2004; Kinsler, 2011; Krezmien et al., 2006; Noltemeyer & Mcloughlin, 2010a; Noltemeyer & Mcloughling, 2010b; Rausch & Skiba, 2004; Vincent et al., 2012) identified research questions. An example of an appropriate research question was, "How did race and disability affect an individual's risk of being suspended?" (Krezmien et al., 2006, p. 218). Eitle and Eitle (2004) and Hemphill and colleagues (2014) were the only two authors who provided research hypotheses (Eitle & Eitle, 2004; Hemphill et al., 2014). Hemphill and colleagues stated, "Similar student and school factors will be associated with suspension in Washington State and Victoria despite the policy differences in the two states" (Hemphill et al., 2014, p. 189).

Table 14 displays the findings from these studies.

Table 14: Summary of research basis for state level studies.

Study	Purpose	Questions	Hypothesis	Rationale
Afinson and colleauges, 2010	X			X
Christle & Nelson, 2004	X			X
Cooley, 1995	X			X
Eitle & Eitle, 2004	X	X	X	X
Gregory and colleagues, 2011	X			X
Hemphill & Hargreaves, 2009	X			X
Hemphill and colleagues, 2014	X		X	X
Kinsler, 2011	X	X		X
Krezmien and colleagues, 2006	X	X		X
Mcloughlin & Noltemeyer, 2010	X			X
Noltemeyer & Mcloughlin, 2010a	X	X		X
Noltemeyer & Mcloughlin, 2010b	X	X		X
Pei and colleagues, 2013	X			X
Rausch & Skiba, 2004	X	X		X
Vincent and colleagues, 2012	X	X		X
Wang and colleagues, 2005	X			X

Large Scale Databases. Authors of each article that utilized data from large scale databases identified a research purpose and rationale for completing the study. Table 15 displays the research purpose identified by the authors.

Table 15: Purpose of studies that utilized large scale databases.

Study	Purpose
Achilles and colleagues, 2007	Examined factors associated with disciplinary exclusion for students with emotional, behavioral, and learning disabilities
Bowman-Perrot and colleagues, 2013	Examined patterns of exclusion for students with disabilities and factors associated with that exclusion
Duran and colleagues, 2013	Investigated the role that social skills plan in disciplinary exclusions
Gage and colleagues, 2012	Examined gender differences between girls and boys with emotional disabilities with and without a history or arrest
Davis Ganao and colleagues, 2013	Examined the impact of contextual factors, such as school, neighborhood, and family factors and how they impact school suspensions for Black and White students
Hannon and colleagues, 2013	Examined whether skin tone influences suspension rates for African American students
Heard, 2007	Examined the influence of family structure on GPA, college expectations, and school discipline
Kaushal & Nepomnyaschy, 2009	Examined Black/White and Hispanic/White differences in wealth and how it influences retention, suspension, academic achievement, participation in gifted programs, and extracurricular activity participation
Losen and colleagues, 2003	Explored the hypothesis that low teacher quality is an important predictor of a student's risk for suspension
Skiba and colleauges, 2011	Examined racial and ethnic differences in office discipline referrals and discipline decisions
Smith-McKeever & Gao, 2010	Examined the role of maternal substance and alcohol abuse, depression, criminal justice involvement, and race, gender, and SES in a student being suspended from school
Tobin & Vincent, 2011	Examined whether positive behavior supports leads to decreased disciplinary actions for all racial groups
Vincent & Tobin, 2011	Examined how the implementation of school wide positive behavioral supports led to a decrease in exclusionary practices for students with disabilities and from minority backgrounds
Wagner and colleagues, 2005	Examined the educational experiences of students with emotional disturbances
Wallace and colleagues, 2008	Explored racial and ethnic groups and how suspension practices have changed over time; Examined sociodemographic factors that play a role is suspension and expulsion in addition to racial and ethnic factors
Wei and colleagues, 2014	Examined academic achievement, social skills, and behavior problems of students diagnosed with a learning disability and a learning disability plus ADHD and those with an emotional disability and an emotional disability plus ADHD.
Welch & Payne, 2012	Examined whether school punishments were related to racial threat
Wright and colleagues, 2014	Stated that previous research studies have failed to fully explain the racial gap in discipline rates and that methodological limitations might be one reason this occurs; Wanted to address methodological shortcomings of other studies and examined SES, school context, individual student misbehavior across several years and grades
Zhang and colleagues, 2004	Examined trends in disciplinary exclusions according to race and disability status

Authors of seven articles (Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al., 2012; Heard, 2007; Losen et al., 2003; Vincent & Tobin, 2011; Wallace et al., 2008) identified research questions. Vincent and Tobin (2011) stated, "Were long-term exlcusions of students with disabilities equally distributed across students from all ethnicities in schools engaged in ongoing SWPS [school-wide positive support] implementation?" (p. 219). This research question met the established criteria. Authors of five studies (Achilles et al., 2007; Duran et al., 2013; Hannon et al., 2013; Losen et al., 2003; Welch & Payne, 2012) clearly stated their research hypothesis. An example of a hypothesis that met criteria was: "We hypothesized that a higher likelihood of exclusion (HLE) would be associated with the following: 1) child characteristics of African American ethnicity, male gender, older age, and disability categories associated with emotional and behavioral difficulties (EBD and ADHD) as compared to LD" (Achilles et al., 2007, p. 35).

Table 16 displays the findings from this section.

Table 16: Summary of research basis for studies that utilized large scale databases

Study	Purpose	Questions	Hypothesis	Rationale
Achilles and colleagues, 2007	X			X
Bowman-Perrot and colleagues, 2013	X	X		X
Duran and colleagues, 2013	X	X	X	X
Gage and colleagues, 2012	X	X		X
Davis Ganao and colleagues, 2013	X			X
Hannon and colleagues, 2013	X		X	X
Heard, 2007	X	X		X
Kaushal & Nepomnyaschy, 2009	X			X
Losen and colleagues, 2003	X	X	X	X
Skiba and colleagues, 2011	X			X
Smith-McKeever & Gao, 2010	X			X
Tobin & Vincent, 2011	X			X
Vincent & Tobin, 2011	X	X		X
Wagner and colleagues, 2005	X			X
Wallace and colleagues, 2008	X	X		X
Wei and colleagues, 2014	X			X
Welch & Payne, 2012	X		X	X
Wright and colleagues, 2014	X			X
Zhang and colleagues, 2004	X			X

Summary. Authors of all sixty-one papers clearly identified both a research purpose and rationale that was based on a review of existing literature. These studies met the quality indicators proposed by Gersten and colleagues (2005). Authors of thirty-five of the sixty-one articles met the quality indicators for having research questions or hypotheses; twenty-six articles did not state this information. High quality studies include research questions and hypotheses that are used to guide the study. Failure to include those at the onset of one's research raises questions about the validity of findings presented in the article (Gersten et al., 2005).

Sampling Procedures

The next series of items relate to general sampling procedures and design. I evaluated these studies according to whether the authors provided a clear understanding

as to the population from which the sample was drawn, how the sample was obtained, and whether there was an effort made to compare participants in the study to those who did not participate or who refused to participate. These guidelines were adopted from Huck (2011). Gersten and colleagues (2005) state that authors must provide enough information about the population from which participants were drawn so individuals can identify the population of participants to which results might generalize. It is also important to have knowledge of the population so that individuals know how comparable the sample is to the population from which it was drawn (Gersten et al., 2005).

School Level. All of the school level studies provided information regarding the population from which their samples were drawn. The sample was the population in three of the studies (Kaplan & Cornell, 2005; Skiba et al., 2002; Skiba et al., 1997).

Petras and colleagues (2011) obtained their sample from the control subjects of a previous study. The previous study included a sample that was the same as the population. Petras and colleagues (2011) conducted an analysis of demographic factors between their sample and those from the previous study. They reported that the two groups were demographically similar. The authors also compared their sample to the statistics put forth by the U.S. Department of Health and Human Services and found that their sample was demographically similar to urban areas in high risk neighborhoods (Petras et al., 2011). This met the established criteria.

There were problems with the sampling procedures of the three remaining studies (Constendbader & Markson, 1998; Mattison & Aber, 2007; Shirley & Cornell, 2011). Constenbader and Markson (1998) identified the population as individuals coming from urban and small town middle and high schools. They included 750 individuals who

returned surveys and 130 of those were not included in the analysis. The authors did not describe how many surveys were distributed. Consequently, it was not possible to determine if the sample was representative of the population from which it was drawn. Mattison and Aber (2007) drew a sample of students from the population who were present in school and who were African American or White. The authors stated that only African American and White students' responses were analyzed. They did not describe the racial makeup of the population. They did report that ten percent of the student population was not in school on the date that the survey was administered, but they did not report the demographics for that ten percent. It was not possible to determine if the sample was representative of the population. Shirley and Cornell (2011) stated that 400 students in a suburban middle school participated in their study. It was unclear as to how these 400 students were obtained. It was not possible to determine if this sample was the population or if it was a representative sample of the population due to the limited amount of information provided by the authors.

District Level. Authors of seven district level articles (Fasko et al., 1995; McFadden et al., 1992; Mendez, 2003; Mendez & Knoff, 2003; Mendez et al., 2002; Nichols, 2004; Skiba et al., 1997) reported information about the population and utilized the entire population as the study sample. Demographic information relative to the population and the sample was the same. There were no individuals who did not participate in the study, and therefore no additional comparison was necessary.

Authors of three studies (Blake et al., 2001; Butler et al., 2012; Theriot et al., 2010) provided an overall population from which the sample was drawn, and then stated how students were selected for participation from the district. Blake and colleagues

(2011) included all females with one disciplinary infraction, while Butler and colleagues (2012) and Theriot and colleagues (2010) included all students with one disciplinary infraction. The authors examined students with disciplinary infractions, and all students with any number of infractions were included. There were no comparison students in these studies.

The authors of the remaining nine studies (Anderson et al., 2007; Arcia, 2007a, 2007b; Bruns & Moore, 2005; Goran & Gage, 2011; Hinjosa, 2008; Hoffman, 2014; Rouse et al., 2011; Sullivan et al., 2013) had limitations with their sampling procedures. Anderson and colleagues (2007) adequately describe the population that they took their data from. The authors took ten percent of the population from the sixth, seventh, and eighth grade using a stratified sampling procedure and a random numbers selection process. There was no way of knowing how the ten percent selected for analysis differed from the ninety percent of individuals who were not selected or why ten percent was selected when the authors had access to all of the data from the district. Arcia (2007a) described the population and stated that data was only analyzed from sixth grade students who were promoted to seventh grade and who also took the state test. This eliminated 3.6% of students who were not promoted. The authors stated that they eliminated another three percent of students who attended alternative education or special schools. There was no mention as to how the excluded students differed from those included in the study. Arcia (2007b) examined all general education middle and secondary high schools in a large urban district that had at least five percent of its student population classified as Black. There was no way of knowing how many schools were excluded from analysis,

why five percent was selected as the cut point, or how those schools not meeting the five percent threshold differed from those that did.

Bruns and Moore (2005) utilized data from Baltimore City Schools as their population. They stated that they obtained data from 41 schools who implemented a new mental health model and matched them with 41 out of 45 schools who did not use the model on total enrollment, attendance rates, poverty rates, the percentage of students who were not White, and suspension rates. They reported that there were no differences between experimental and control schools on these factors. They did not report any information from the four schools who were not selected and how these schools differed from those who were included. Rouse and colleagues (2011) examined third grade students in a district in the Northeast. Students who had complete data (78% of the population) were selected for inclusion in the study. No comparisons were many between those students included and those with incomplete data sets. Sullivan and colleagues (2013) stated the population from which their sample was drawn and how schools were eliminated for inclusion in the sample. Reasons for exclusion included incomplete data relative to teacher characteristics, school demographics, or academic performance. Schools with under 100 students were excluded from the sample. There was no comparison made between excluded versus included schools.

Goran and Gage (2011) and Hinjosa (2008) described their population yet failed to compare their sample to students who did not participate. Goran and Gage (2011) stated that the population was the total number of students receiving special education services with emotional disabilities and learning disabilities who had complete records. Two thousand three hundred and six students were known to receive special education

services, but only 142 met sampling criteria. It was unknown how many students were excluded for not having complete datasets versus how many were excluded due to their disability status not meeting study criteria. It was unknown how excluded students differed from those included in the study. Hinjosa (2008) asked teachers and students in a large urban school district to complete surveys. Sixth and eighth grade data sets with complete student and teacher data were selected for analysis. There was no way of knowing how many teachers were asked to participate, what the response rate was, and how many surveys were excluded for incomplete data. There were no comparisons made between those who participated and those who did not participate.

Hoffman (2014) obtained data from students who were suspended or expelled from 15 district schools after the implementation of a new zero tolerance policy and compared them to 22 comparison schools who were in the same county as the district schools who did not implement the new policy. There was no information as to how these 22 schools were selected or whether they differed substantially from the district schools included in the study. This makes further analysis of this data difficult.

State Level. Authors of eight state level studies (Christle & Nelson, 2004; Cooley, 1995; Kinsler, 2011; Krezmien et al., 2006; Mcloughlin & Noltemeyer, 2010; Pei et al., 2013; Rausch & Skiba, 2004; Vincent et al., 2012) used the population as their sample. An example of this found in Mcloughlin and Noltemeyer (2010) was an examination of all schools labeled as "major urban, very high poverty" (p. 5) according to the Ohio Department of Education. This included all cases of this type of school in the district leaving no cases available for comparison.

The authors of the remaining eight (Afinson et al., 2010; Eitle & Eitle, 2004; Gregory et al., 2011; Hemphill & Hargreaves, 2009; Hemphill et al., 2014; Noltemeyer & Mcloughlin, 2010a, Noltemeyer & Mcloughlin, 2010b; Wang et al., 2005) studies had problems in this area. Afinson and colleagues (2010) completed a study that had two population and sample components. The first population was all Minnesota public school students; the sample included these students thus leaving no comparison group. This was sound. Problematic to the sampling procedures utilized was the inclusion of focus groups of superintendents, principals, student service personnel, teachers, community members, and parents. The reader was never told how many individuals were asked to participate or how these individuals were recruited. The number of individuals who participated by region and school position was listed. There was no comparison to individuals who were asked to participate yet did not. Gregory and colleagues had a similar problem with their study (2011). These authors included all high school students in Virginia as the population. Two hundred and eighty-nine of the 314 schools provided permission for data analysis. The authors excluded schools with under ten Black or White students and any schools who had missing data. No comparison between those schools included and excluded from the study was made. Approximately twenty-five ninth grade students were randomly selected from each school using a random numbers table to complete a survey on school climate. The word "approximately" indicated that a different number of students were selected in each building to complete the survey. The authors admitted that in smaller schools the entire ninth grade class was asked to participate in the survey. No comparisons were made between those included in the study and those who did not participate or who were not asked to participate on any of the variables.

Eitle and Eitle (2004) examined all school districts in Florida but excluded 27 districts from the final analysis because they had fewer than five middle and high schools and were from rural and less populated areas. The authors admitted that they excluded these schools because they were different than other schools included in the study. There was no attempt to describe these differences through a description of data. Wang and colleagues (2005) provided clear procedures for obtaining a sample of participants from a juvenile justice facility. They matched the sample from the juvenile justice facility to public school students on the following variables: 1) age, 2) race, 3) gender, 4) disability status, 5) socioeconomic status, and 6) the type of school the student attended. There were 6,152 students enrolled in the juvenile justice system; peer matches were found for 5,187 students. There was no comparison between those in the juvenile justice sample and those students whom a match could not be found for (Wang et al., 2005).

Noltemeyer and Mcloughlin (2010a; 2010b) completed two studies in which data was obtained from school districts in Ohio. Noltemeyer and Mcloughlin (2010a) excluded 307 school districts out of 595 for missing data. The authors completed an analysis of typology, one of the main measures utilized in the study, and acknowledged that the typology of the sample was different compared to the state of Ohio. Noltemeyer and Mcloughlin (2010b) excluded from the analytic sample all school districts that had fewer than ten White or African American students excluded from school during the time period under investigation. There was no discussion as to how these schools differed from those included.

Hemphill and Hargreaves (2009) and Hemphill and colleagues (2014) both utilized data from adolescents who were in fifth, seventh, and ninth grade in Victoria,

Australia and Washington State. Hemphill and Hargreaves (2009) stated that 60 public and private schools were randomly selected while ensuring that the probability of selection was proportionate to the number of students in the school. There was no information available to describe exactly how this was done. The authors recruited and obtained consent for 5,769 students to participate. It was unknown how many students were asked to participate and declined to participate or if all those asked to participate did participate. Fifth grade students were excluded from analysis because they did not have a high prevalence of violent and antisocial behavior after results were obtained. The total number of participants in both locations was 3,899. It was impossible to make comparisons between those who did and did not participate. Hemphill and colleagues (2014) stated that probability proportionate sampling was utilized to obtain a sample from each school based on the size of the school. One hundred and fifty-two schools in Victoria and 153 schools in Washington were selected to participate. The authors stated that 74.8% of schools agreed to participate in Washington and 73.5% agreed to participate in Victoria. This resulted in the same sample size for the total recruitment identified in Hemphill and Hargreaves (2009). The seventh and ninth grade sample sizes were the same size. There is no comparison made between those included in the sample at those who chose not to participate (Hemphill et al., 2014).

Large Scale Databases. Authors of none of the studies that utilized large scale databases had well developed descriptions of the population, how the sample was obtained, and comparisons to those who did not participate.

Authors who examined data from the Special Education Elementary Longitudinal Study (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al.,

2012; Wagner et al., 2005; Wei et al., 2014) did not provide information about the population from which the sample was drawn. One of the major problems with the sampling procedures was reported and acknowledged by Achilles and colleagues (2007). Of the 1,124 schools asked to participate, only 245 school districts and 32 special schools participated. Students with certain disabilities were identified and asked to participate from these schools. This led to over and under representation of certain subgroups and clustering of students in schools which suggested that the sample obtained was not truly representative of the population. Authors of the studies did not provide information about the total number of families who were asked to participate versus those who actually participated in these studies. Clearer descriptions of the sampling procedures were provided when these studies selected individuals for participation who belonged to a certain disability classification (Achilles et al., 2007; Bowman-Perrot et al., 2013; Gage et al., 2012; Wagner et al., 2005; Wei et al., 2014) or based on a cut score on a specific measure (Duran et al., 2013). There was no way to know how these individuals compare to those who did not participate in the study because they refused or their school district declined participation.

Authors who utilized the School-Wide Information System (Skiba et al., 2011; Tobin & Vincent, 2011; Vincent & Tobin, 2011) failed to identify any information regarding the population of schools that utilize this tool. Tobin and Vincent (2011) claimed that the schools who utilized the School-Wide Information System were representative of US schools yet there was no population data to support this claim, only a reference to a previous study. In the sampling procedures described by authors of two of the articles (Skiba et al., 2011; Tobin & Vincent, 2011), one of the inclusionary criteria

was that the individuals agreed to participate in the research project, while one study (Vincent & Tobin, 2011) stated that individuals needed to complete a survey to participate in the research project. There was no mention in any of these articles as to the number of individuals who were invited to participate but chose not to participate nor any information as to how those individuals who participated may be different from individuals who declined participation.

Authors of the remaining studies either provided no information on the population (Hannon et al., 2013; Losen et al., 2003; Smith-McKeever & Gao, 2010; Zhang et al., 2004) or stated that the data came from a national probability sample (Davis Ganao et al., 2013; Welch & Payne, 2012) or from a population that was a national representative sample (Heard, 2007; Kaushal & Nepomnyaschy, 2009; Wright et al., 2014) without providing any additional information on the characteristics of the population. Some of the sample descriptions were much clearer in that all individuals who fit into a certain classification whether by race (Davis Ganao et al., 2013), year of data collection (Losen et al., 2003), age of students and parents (Kaushal & Nepomynaschy, 2009), students with disabilities (Zhang et al., 2004) or all individuals from which data was collected (Wright et al., 2014) were selected by the authors for inclusion in the articles. Heard (2007) did not provide clear sampling procedures and response rates for the entire population studied. Welch and Payne (2012) stated that the analytic sample did not contain a sample representative of the population studied. These authors acknowledged that data from small town and rural locations were overrepresented in the final data set.

Summary. Authors of twenty-two articles provided clear descriptions of their sampling procedures. These authors clearly described both the sample and the population

from which the sample was drawn. They also made comparisons between the sample obtained and the population when it was appropriate to do so. Many authors that met criteria in this area utilized the population as the sample and did not need to make further comparison between the population and the sample or between those included and excluded from the study. Authors of thirty-nine papers did not meet the established criteria in this area. It was often unclear how samples were obtained and how those included in the sample compared to the population from which the sample was drawn. This makes replication and generalization of results impossible when authors fail to provide this information in their articles (Gersten et al., Huck, 2011).

Sample Description

Gersten and colleagues (2005) stated that it is important for authors to provide sufficient detail about study participants for replication in future research studies and to identify the population that results can be generalized to. Gersten and colleagues (2005) stated information must be provided relative to demographic information including: 1) race, 2) gender, 3) age, 4) socioeconomic status 5) special education status and 5) achievement scores. Gersten and colleagues (2005) stated that this is not an exhaustive list of demographic factors. Two additional elements were added: 1) grade (Hudson, Lewis, Stichter, & Johnson, 2011) and 2) intelligence quota (Mooney, Epstein, Reid, & Nelson, 2003) in addition to this list generated by Gersten and colleagues (2005). I reviewed each article to determine the degree to which these elements were present.

School Level. Authors of all school level studies provided information about at least one of the quality indicators.

Race. Racial composition of the sample was described by authors in all seven articles. Each article included enough information for the reader to gain an understanding of the racial composition of the individuals within the study.

Gender. Authors of two of the articles (Mattison & Aber, 2007; Skiba et al., 1997) lacked adequate descriptions of gender. Mattison and Aber (2007) reported the gender composition of the original sample but not the final sample analyzed. Skiba and colleagues (1997) provided the gender demographic information for the entire school but not for the sample. Authors of the remaining five articles provided an adequate description of the gender composition of the sample.

Age. The age of the participants was provided by authors of three (Kaplan & Cornell, 2005; Petras et al., 2011; Shirley & Cornell, 2011) out of the seven studies.

Socioeconomic Status. Authors of all seven studies referenced the socioeconomic status of the population or sample studied. Authors of three of the articles (Kaplan & Cornell, 2005, Petras et al., 2011, and Skiba et al., 2002) did an adequate job of describing the socioeconomic status of the sample participants. The most common error made was a reference to the overall socioeconomic status of the school rather than to the composition of the sample (Costenbader & Markson, 1998, Shirley & Cornell, 2005, Skiba et al., 1997). One study provided the socioeconomic composition of the original sample but not the final sample analyzed (Mattison & Aber, 2007).

Special Education Status. Authors of two articles (Kaplan & Cornell, 2005; Skiba et al., 2002) provided information about whether students received special education services.

Achievement Scores. Authors of all seven articles failed to provide information relative to student achievement.

Grade. Authors of all seven studies provided information regarding the grade level of participants within the sample.

IQ. Authors of all seven papers failed to provide information relative to student intelligence quotas.

Table 17 displays the findings of this section.

Table 17: Sample descriptions for school level studies.

Study	Race	Gender	Age	SES	Special Education	Achievement	Grade	IQ
Constenbader & Markson, 1998	X	X					X	
Kaplan & Cornell, 2005	X	X	X	X	X		X	
Mattison & Aber, 2007	X						X	
Petras and colleagues, 2011	X	X	X	X			X	
Shirley & Cornell, 2011	X	X	X				X	
Skiba and colleagues, 2002	X	X		X	X		X	
Skiba and colleagues, 1997- Study 2	X						X	

District Level. Authors of two articles (Hinjosa, 2008; Hoffman, 2014) failed to provide any information about the participants in their sample. Authors of the remaining studies addressed at least one of the quality indicators.

Race. Author of all but five articles (Arcia, 2007b; Bruns & Moore, 2005; Hinjosa, 2008; Hoffman, 2014; Rouse et al., 2011) adequately described the race and ethnicity of study participants. Problems in this area were that authors reported the percent of Black enrollment while not reporting the enrollment of any other racial group (Acria, 2007b), provided racial and ethnic backgrounds of students while not providing data relative to the teachers who completed surveys (Hinjosa, 2008), provided information for experimental but not control schools (Hoffman, 2014), and provided data for the overall sample and the smallest analytical sample but not for all samples analyzed (Rouse et al., 2011). Bruns and Moore (2005) did not provide the racial composition of their sample.

Gender. Authors of all but seven articles (Arcia, 2007b; Bruns & Moore, 2005; Hinjosa, 2008; Hoffman, 2014; McFadden et al., 1992; Mendez, 2003; Nichols, 2004) provided the gender composition of the sample. Rouse and colleagues (2014) provided data for the overall sample and the smallest sample analyzed but not for every group on which an analysis was conducted.

Age. Authors of three articles (Goran & Gage, 2011; Rouse et al., 2011; Sullivan, et al., 2013) provided information about the age of their participants.

Socioeconomic Status. Authors of all but six articles (Blake et al., 2011; Fasko et al., 1995; Hinjosa, 2008; McFadden et al., 1992; Mendez, 2003) provided information relative to socioeconomic status of study participants.

Special Education Status. Information relative to special education status was provided by authors of seven articles (Anderson et al., 2007; Arcia, 2007a; Fasko et al., 1995; Goran & Gage, 2011; Skiba et al., 1997; Sullivan et al., 2013; Theriot et al., 2010).

Achievement Scores. Achievement data was only provided by authors of five articles (Anderson et al., 2007; Arcia, 2007a; Goran & Gage, 2011; Mendez et al., 2002; Sullivan et al., 2013).

Grade. Authors of four studies (Anderson et al., 2007; Arcia, 2007a; Mendez, 2003; Rouse et al., 2011) provided the number of students in each grade included in the study. Authors of eight articles (Arcia, 2007b; Bruns & Moore, 2005; Butler et al., 2012; Mendez & Knoff, 2003; Nichols, 2004; Skiba et al., 1997; Sullivan et al., 2013; Theriot et al., 2010) provided information relative to the school level of the participants. Authors of seven articles (Blake et al., 2011; Fasko et al., 1995; Goran & Gage, 2011; Hinjosa, 2008; Hoffman, 2014; McFadden et al., 1992; Mendez et al., 2002) did not provide any information relative to the grade level of participants in their study.

IQ. Data relative to intelligence quotas was provided by the authors of one study (Goran & Gage, 2011).

A summary of these findings is displayed in Table 18.

Table 18: Sample descriptions for district level studies.

Study	Race	Gender	Age	SES	Special Education	Achievement	Grade	IQ
Anderson and colleagues, 2007	X	X		X	X	X	X	
Arcia, 2007a	X	X		X	X	X	X	
Arcia, 2007b				X			X	
Blake and colleagues, 2011	X	X						
Bruns & Moore, 2005				X			X	
Butler and colleagues, 2012	X	X		X			X	
Fasko and colleagues,1995	X	X			X			
Goran & Gage, 2011	X	X	X	X	X	X		X
Hinjosa, 2008								
Hoffman, 2014								
McFadden and coleagues, 1992	X							
Mendez & Knoff, 2003	X	X					X	
Mendez, 2003	X						X	
Mendez and colleagues, 2002	X	X				X		
Nichols, 2004	X						X	
Rouse and colleagues, 2011		X	X	X			X	
Skiba and colleagues, 1997- Study 1	X	X			X		X	
Sullivan and colleagues, 2013	X	X	X	X	X	X	X	
Theriot and colleagues, 2010	X	X			X		X	

State Level. Rausch and Skiba (2004) provided no information regarding the characteristics of their participants. Authors of four of the articles (Afinson, et al., 2010; Cooley, 1995; Gregory et al., 2011; Kinsler, 2011) provided some information about student participants; however, they failed to provide data about participants in focus groups (Afinson, et al., 2010), survey participants (Cooley, 1995; Gregory et al., 2011), or smaller samples from within the large data set upon which analyses were conducted (Kinsler, 2011).

Race. Authors of five articles (Afinson, et al., 2010; Cooley, 1995; Krezmien et al., 2006; Pei, et al., 2003; Vincent et al., 2012) provided descriptions that adequately described the racial and ethnic composition of the sample. Noltemeyer and Mcloughlin (2010a; 2010b) only provided the percentages of minority students in each school under investigation (2010a) or whether the participants were White or Black but no further information as to the percentages of each group within the study (2010b). Other errors made by authors include: provided only data on the percentage of Black students in the sample (Kinsler, 2011; Mcloughlin & Noltemeyer, 2010), provided an aggregate percentage of only the Black and Hispanic students in the sample (Eitle & Eitle, 2004), or provided data for the percentages of Black and White students while grouping all other racial and ethnic groups in an "other" category (Gregory et al., 2011).

Gender. Authors of five articles (Cooley,1995; Kinsler, 2011; Krezmien et al., 2006; Pei et al., 2013; Vincent et al., 2012) reported on the gender compositions of their sample.

Age. Hemphill and Hargreaves (2009) were the only authors who described the age of the participants using means and standard deviations. Hemphill and colleagues

(2014) stated the age range in which most of the participants fell but did not provide concrete ages of their participants.

Socioeconomic Status. Authors of three articles (Gregory et al., 2011; Hemphill et al., 2014, Mcloughlin & Noltemeyer, 2010) reported on the socioeconomic status of the participants. Authors of one article (Krezmien et al., 2006) reported that this information was not available to the researchers.

Special Education Status. Authors of four studies (Cooley, 1995; Kinsler, 2011; Krezmien et al., 2006; Vincent et al., 2012) provided information about the special education status of their sample.

Achievement Scores. Kinsler (2011) and Wang and colleagues (2005) provided data relative to school achievement in their articles. Kinsler (2011) provided data relative to students who were below grade level in mathematics, and Wang and colleagues (2005) reported retention data and grade point averages.

Grade. Authors of all but five articles (Cooley, 1995; Mcloughlin & Noltemeyer, 2010, Noltemeyer & Mcloughlin, 2010a, 2010b; Rausch & Skiba, 2004) provided descriptions of the grade level of their participants. Authors of three articles provided the number of participants involved in the study by grade level (Hemphill & Hargreaves, 2009; Hemphill et al, 2014, Wang et al., 2005). Authors of two articles (Afinson et al., 2010; Pei et al., 2013) stated that the participants were all kindergarten through twelfth grade students. Authors of six articles (Christle & Nelson, 2004; Eitle & Eitle, 2004; Gregory et al., 2011; Kinsler, 2011; Krezmien, et al., 2006; Vincent et al., 2012) provided grouped grade or school (i.e. elementary, middle) levels of participants.

IQ. None of the authors provided data relative to the intelligence quotas of their participants.

Table 19 displays a summary of the studies in this section.

Table 19: Sample descriptions for state level studies.

Study	Race	Gender	Age	SES	Special Education	Achievement	Grade	IQ
Afinson and colleagues, 2010	X						X	
Christle & Nelson, 2004							X	
Cooley, 1995	X	X			X			
Eitle & Eitle, 2004	X						X	
Gregory and colleagues, 2011	X			X			X	
Hemphill & Hargreaves, 2009			X				X	
Hemphill and colleagues 2014			X				X	
Kinsler, 2011	X	X		X	X		X	
Krezmien and colleagues, 2006	X	X			X		X	
Mcloughlin & Noltemeyer, 2010	X			X				
Noltemeyer & Mcloughlin, 2010a	X							
Noltemeyer & Mcloughlin, 2010b	X							
Pei and colleagues, 2013	X	X					X	
Rausch & Skiba, 2004								
Vincent and colleagues, 2012	X	X			X		X	
Wang and colleauges, 2005						X	X	

Large Scale Databases. Authors of two of the articles (Losen et al., 2003; Zhang et al., 2004) provided no descriptions of the participants in the study. Authors of one study (Kaushal & Nepomnyaschy, 2009) provided information for the study participants overall yet failed to provide a detailed description of those participants who were utilized in suspension data analysis. Descriptions from the remaining sixteen articles were analyzed according to the quality indicators.

Race. Authors of all sixteen studies provided a description of the racial composition of the sample; however, authors of two of the articles (Tobin and Vincent, 2011; Welch & Payne, 2012) provided limited information that did not satisfy requirements of the quality indicators in this category. Tobin and Vincent (2011) provided the demographics for White and African American students and then grouped all other racial and ethnic groups into an "other" category. Welch and Payne (2012) provided information about the percentage of Black and Hispanic students in the study while failing to provide information on the other racial and ethnic groups.

Gender. Authors of three articles (Davis Ganao et al., 2013; Skiba et al., 2011; Tobin & Vincent, 2011) provided no information regarding the gender composition of the study. Authors of one article (Gage et al., 2012) provided weighted gender data rather than the actual numbers of male and female participants.

Age. The age of the individuals in the study was not reported by authors of six articles (Skiba et al., 2011; Tobin & Vincent, 2011; Vincent & Tobin, 2011; Wallace et al., 2008; Welch & Payne, 2012; Wright et al., 2014). Four authors (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Wagner et al., 2005) provided the age range of participants in their study. Authors of one article (Smith-McKeever & Gao,

2010) interviewed mothers and did not provide the age of the mothers in the sample at the time of interview yet provided the age of the mother at the time that she had her first child.

Socioeconomic Status. Authors of five articles (Hannon et al., 2013; Skiba et al., 2011; Tobin & Vincent, 2011; Wallace et al., 2008; Welch & Payne, 2012) provided no information on the socioeconomic status of the individuals in the study.

Special Education Status. Authors of eight articles (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al., 2012; Vincent & Tobin, 2011; Wagner et al., 2005; Wei et al., 2014, Wright et al., 2014) provided information on the special education status of their students.

Achievement Scores. School achievement data was provided by authors of six studies (Bowman-Perrot et al., 2013; Heard, 2007; Smith-McKeever & Gao, 2010; Wagner et al., 2005; Wei et al., 2014; Wright et al., 2014). Wagner and colleagues (2005) and Wei and colleagues (2014) provided achievement data from the math calculation and passage comprehension score students received on the Woodcock Johnson- III. Heard (2007) reported the grade point average for high school students, and Wright and colleagues (2014) included a measure based on parent report of the grades a student typically receives. Bowman-Perrot and colleagues (2013) provided achievement data; however, the authors failed to name the measure used in the study. Smith-McKeever and Gao (2010) reported data relative to mothers' level of education.

Grade. Authors of studies reported that all students either came from the same grade (Wallace et al., 2008; Wright et al., 2014), reported data by school level (Tobin & Vincent, 2011; Vincent & Tobin, 2011; Welch & Payne, 2012), reported a range of

grades that students in the sample came from (Duran et al., 2013; Skiba et al., 2011), or provided the mean grade level along with the standard deviation (Davis Ganao et al., 2013). Smith-McKeever and Gao (2010) reported the highest grade level that mothers interviewed completed. Authors of six studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Gage et al., 2012, Hannon et al., 2013; Heard, 2007; Wagner et al., 2005; Wei et al., 2014) failed to provide data on the grade level of their participants.

IQ. Intelligence quota data was provided by the author of one study (Heard, 2007) based on scores on a picture vocabulary test.

Table 20 displays a summary of the information in this section.

Table 20: Sample descriptions for studies that utilized large scale databases.

Study	Race	Gender	Age	SES	Special Education	Achievement	Grade	IQ
Achilles and colleagues, 2007	X	X	X	X	X			
Bowman-Perrot and colleagues, 2013	X	X	X	X	X			
Duran and colleagues, 2013	X	X	X	X	X		X	
Gage and colleagues, 2012	X	X	X	X	X			
Davis Ganao and colleagues, 2013	X		X	X			X	
Hannon and colleagues, 2013	X	X	X			X		
Heard, 2007	X	X	X	X		X		X
Kaushal & Nepomnyaschy, 2009								
Losen and colleagues, 2003								
Skiba and colleagues, 2011	X						X	
Smith-McKeever & Gao, 2010	X	X	X	X		X	X	
Tobin & Vincent, 2011							X	
Vincent & Tobin, 2011	X	X		X	X		X	
Wagner and colleagues, 2005	X	X	X	X	X			
Wallace and colleagues, 2008	X	X					X	
Wei and colleagues, 2014	X	X	X	X	X	X		
Welch & Payne, 2012		X					X	
Wright and colleagues, 2014	X	X		X	X	X	X	
Zhang and colleagues, 2004								

Summary. Authors of fifty-five studies included some information about the characteristics of the sample participants. Authors of six studies failed to provide any information about the characteristics of their participants. This makes it impossible for researchers to replicate these studies in the future (Gersten et al., 2005). It also makes it impossible to generalize these results to other students beyond those included in the author's study (Gersten et al., 2005).

The most common characteristic that authors reported on was race (forty-six articles), followed by grade level (thirty-nine articles), and gender (thirty-five articles). Authors reported socio-economic status in twenty-five articles and special education status in twenty-one articles. Age was reported by author in eighteen articles, and achievement scores were presented in eleven articles. Data relative to intelligence quotas was only presented by authors of two articles. The more information authors provide readers about their participants leads to better generalization of results and the possibility of replication in future studies (Gersten et al, 2005).

Setting and School Description

Schools and educational settings are complex in nature (Odom et al., 2005). This makes it important for authors to provide information about school and setting factors used in their research studies. Studies in this section were reviewed to determine whether they provided information about the setting in which their study took place and the size of the school involved in their research.

School Level. Authors of seven articles described the setting in which their study took place. An example of a setting description that was considered to meet the quality indicators stated that the participants came from "students (grades 9^{th} – 12^{th}) attending

two public schools in a moderate-size, mid-western university town" (Mattison & Aber, p. 4).

School size was adequately described by authors in three (Mattison & Aber, 2007; Skiba et al., 2002; Skiba et al., 1997) out of the seven articles. Skiba and colleagues (1997) provided the most thorough description of the size of the school. One school was analyzed and the total number of students enrolled in that school was stated. Skiba and colleagues (2002) provided a range within their description and classified schools as to whether or not they had: 1) fewer than 400 students, 2) between 400 and 800 students, or 3) greater than 800 students. Mattison and Aber (2007) stated that the smallest school within their sample had 671 students while the largest had 1,008 students. This provided the reader with a range of school sizes.

Kaplan and Cornell (2005) stated the total number of students served within the schools studied, and Petras and colleagues (2011) stated the average class size within the school. Both failed to leave the reader with a true understanding of the overall size of the school.

District Level. Authors of all district level studies provided a description of the setting in which their research took place. Sullivan and colleagues (2013) described their setting as "One diverse urban school district in Wisconsin. […] The district served 24,295 students in 51 schools during the 2009-2010 academic year and had an overall suspension rate of 7.79%" (p.102). This met the criteria for providing a description of the district setting.

Authors of four studies (Bruns & Moore, 2005; Hoffman, 2014; Skiba et al., 1997; Sullivan et al., 2013) provided adequate descriptive information about the schools

including the school size. Sullivan and colleagues (2013) provided an example that met the criteria by providing both the mean enrollment in their schools (460.09) and the standard deviation (298.88). They also provided the mean and standard deviation of the student to teacher ratio.

Authors of two studies (Arcia, 2007a, 2007b) provided some information about the schools yet failed to provide information about the size of the schools. Authors of five studies (Butler et al., 2012; Fasko et al., 1995; McFadden et al., 1992; Mendez et al., 2002; Nichols, 2004) examined data based on school level factors yet failed to provide any information about the schools in the study.

The authors of the remaining eight studies (Anderson et al., 2007; Blake et al., 2011; Goran & Gage, 2011; Hinjosa, 2008; Mendez & Knoff, 2003; Mendez, 2003; Rouse et al., 2011; Theriot et al., 2010) did not examine school level factors in data analysis and therefore did not need to provide information on the individual schools included in the study.

State Level. Authors of all but four articles (Christle & Nelson, 2004; Cooley, 1995; Rausch & Skiba, 2004; Vincent et al., 2012) provided information about the state in which their research took place. This was accomplished by explicitly indicating the state data was obtained from. Vincent and colleagues (2012) stated that their research took place in the Pacific Northwest but not the specific state utilized in their research.

Authors of eight articles (Christle & Nelson, 2004; Cooley, 1995; Eitle & Eitle, 2004; Gregroy et al., 2011; Noltemeyer & Mcloughlin, 2010a, 2010b; Pei et al., 2013; Rausch & Skiba, 2004) examined data related to schools or school districts. Authors of

two articles (Gregory et al., 2011; Noltemeyer & Mcloughlin, 2010a) provided information about the size of the schools utilized in their research

Large Scale Databases. All of the authors of studies that utilized data from large scale databases did not need to describe the school or setting as there was no setting to describe.

Summary. Authors of all but four studies provided adequate descriptions of the setting in which their research was conducted. Authors of nine out of twenty-six studies who analyzed school level data provided adequate descriptions of sample size. Odom and colleagues (2005) stated that it is important for researchers to provide a description of setting and the school. When authors fail to provide this information for readers replication and generalization of results is difficult.

Adequacy of Variable Description

The quality of a study's independent and dependent measures effects the outcomes of the study and the ability to replicate research designs in future studies (Gersten et al., 2005). Authors must provide precise, operational definitions of all independent and dependent variables utilized in their studies (Gersten et al., 2005; Horner et al., 2005). Operational definitions allow for valid interpretation of results and consistent assessment of the constructs being researched (Horner et al., 2005). Subjectivity in variable descriptions is not allowed (Horner et al., 2005). I reviewed each of the studies according to two quality indicators: 1) whether independent and dependent measures were stated and 2) whether independent and dependent measures were operationally defined.

School Level. All of the authors listed the dependent measures they utilized in their studies. Authors of two studies (Kaplan & Cornell, 2005; Mattison & Aber, 2007) failed to operationalize their dependent measures. Kaplan and Cornell (2005) identified threat level and disciplinary infraction as dependent measures within their study. Threat level was operationally defined and referenced a checklist that was utilized to interpret a specific threat. Disciplinary infractions were coded into one of four categories. The authors provided a non-exhaustive list of behaviors that fell within each category. It was unknown exactly how each behavior was coded as the list was non-exhaustive. This made this variable not fully operationalized. Mattison and Aber (2007) identified three dependent variables. These included grade, suspension, and the number of times an individual had detention. The suspension question asked individuals whether they were ever suspended. This was answered by a yes or no response. This was operationalized. The detention question provided a range of days, and individuals were asked to select the range within which their number of days of detention fell. This was also operationalized. The third component asked students about the grades they receive in school. The choices asked students to identify whether they received mostly As, mostly Bs, mostly Cs, mostly Ds, or mostly Fs. This was problematic due to the fact that this was not operationally defined and students' perception led to the identification with one of these categories rather than true achievement values. An example of an operationalized dependent measure was provided by Petras and colleagues (2011). Petras and colleagues (2011) stated that "long-term suspension means the removal of a student from school for disciplinary reasons for a period of more than 10 consecutive days" (p. 227). This met criteria.

Authors of all seven studies reported the independent measures utilized in their research. Author of only one study (Constenbader & Markson, 1998) provided measures that were not operationally defined. These authors operationalized race into a binary code of "White" or "not White" and grouped individuals according to a classification of a rural or urban location without providing additional information as to how this classification was made. An example of an operationalized independent measure that met standards appeared in Skiba and colleagues (2002). Skiba and colleagues (2002) defined socio-economic status according to a student's "free or reduced lunch status" (p.325).

Table 21 displays the dependent and independent measures used by the authors in these studies.

Table 21: Dependent and independent measures across school level studies.

Study	Dependent Measures	Independent Measures
Constenbader & Markson, 1998	Internal suspension; External suspension	Race; Location; Gender; Involvement with legal system; Peer skills
Kaplan & Cornell, 2005	Threat level; Disciplinary infraction	Special education disability status and type; Gender; Race; School level
Mattison & Aber, 2007	Grades; Suspension; Detention	Racial Climate Survey
Petras and colleagues, 2011	Short-term suspension; Long-term suspension; Grade at first school removal	Age; Gender; Race; Free or reduced lunch status; Individual aggression; Classroom aggression
Shirley & Cornell, 2011	Discipline referral; Out of school suspension	School Climate Survey; Race
Skiba, and colleauges 2002	Disciplinary referrals; Suspensions; Expulsions	Race; Gender; Socioeconomic status
Skiba and colleagues, 1997- Study 2	Number of referrals; Number of suspensions	Gender; Ethnicity; Disability label; Socioeconomic status

District Level. Authors of all of the district level studies stated what their dependent measures were. Authors of four studies (Arcia, 2007b; Blake et al., 2011; Fasko et al., 1995; McFadden et al., 1992) failed to provide operational definitions of their dependent measures.

Authors of all of the studies stated what their independent measures were. Authors of four studies (Arcia, 2007a; Fasko et al., 1995; McFadden et al., 1992; Sullivan et al., 2013) failed to provide operational definitions of all of the independent measures included in the study.

Table 22 displays a summary of the dependent and independent measures included in these studies.

Table 22: Dependent and independent measures across district level studies.

Study	Dependent Measures	Independent Measures
Anderson and colleagues, 2007	Suspended in following school year	Prior reading achievement; Lunch status; Exceptionality status; Suspension in prior school year
Arcia, 2007a	Type of suspension; Duration of suspension	Race; School attended; Reading achievement
Arcia, 2007b	School suspension of Black students	Suspension of non-Black students; Reading achievement of Black and non-Black students; Black student enrollment; Participation in free and reduced lunch program; Experience of instructional staff
Blake and colleagues, 2011	Out of school suspensions for 3 or 5 days; Top 10 disciplinary infractions; In-school suspension	Race
Bruns & Moore, 2005	Number of suspension days; Average length of suspension; Total suspension days for school	Enrollment; Attendance rate; Poverty rate; Percent non-White; Suspension rate; Days per suspension; Total suspension days per school
Butler and colleagues, 2012	Exclusionary or non-exclusionary disciplinary sanction	Race; Gender; Socioeconomic status; School level; Behavior role
Fasko and colleagues, 1995	Suspensions	Race; Gender; School level
Goran & Gage, 2011	Language skills; Cognitive ability; Academic performance; History of suspension	Identified disability status
Hinjosa, 2008	Out of school suspension; In school suspension	Race; Gender; Presence of mother in home; Presence of father in home; Number of siblings in home; Home resources; Participation in after school activities; Academic engagement; Student misbehavior; Student beliefs about teacher fairness / caring; Teacher expectations
Hoffman, 2014	Proportion of days students suspended; Percent recommended for expulsion	Race

Study	Dependent Measures	Independent Measures
McFadden and colleagues, 1992	Referral; Suspension; Type of violation	Race; Gender
Mendez & Knoff, 2003	Unduplicated suspensions; Duplicated suspensions; Offenses	Race; Gender; School Level
Mendez, 2003	Out of school suspensions	Race; Gender; Self-esteem; Early delinquency; Reading achievement; Math achievement; Teacher rating of behavior; School adjustment; Socioeconomic status; Special education status; Concerns about middle school; On-time graduation; Reading achievement (grades 7-8); Math achievement (grades 7-8)
Mendez and colleagues, 2002	Duplicated suspension	Life involvement; Mobility rate; Promotion rate; Parent volunteers; Parent conferences; Educational involvement; Teacher experience; Percent new staff; Enrollment; Percent capacity; Operating cost; Class Size; Percent white; Percent Black; Percent Hispanic; Percent free and reduced lunch; Teacher absence; Kindergarten readiness; Writing; Stanford reading; Stanford math
Nichols, 2004	Out of school suspension events	Free and reduced lunch status; Minority students; Majority students
Rouse and colleagues, 2011	Reading and math nonproficiency; Truancy; Suspension; Classroom conduct	Birth risk; Inadequate prenatal care; Teen mother; Low maternal education; High lead exposure; Homelessness; Child maltreatment; Cumulative risk
Skiba and colleagues, 1997- Study 1	Number of referrals; Number of suspension	Gender; Ethnic status; Disability label; Socioeconomic status
Sullivan and colleagues, 2013	Whether the student was suspended at least once; Number of suspensions	Age; Race; LEP status; Special education status; Socioeconomic status; Proportion of teachers from racial minority group; Proportion of teacher with advanced degree; Proportion of students LEP; Proportion of students free and reduced lunch; Proportion of students belonging to one of more racial minority groups; Total number of students; Percent of students retained; Percent of students truant; Percent of students meeting state standards in reading and math; Rates of drug / weapons offenses per 1,000 students; Rates of non-drug / weapons offenses per 1,000 students
Theriot and colleagues, 2010	School exclusion at student's last infraction of school year	Gender; Ethnicity; Poverty; Special education status; Enrollment in ESL program; Last infraction violent; Last infraction zero tolerance; School type; Total enrollment; Percent ethnic minority; Percent economically disadvantaged

State Level. Authors of all of state level studies stated what their dependent measures were. Authors of six articles (Afinson et al., 2010; Cooley, 1995; Kinsler, 2011; Mcloughlin & Noltemeyer, 2010; Pei et al., 2013; Rausch & Skiba, 2004) did not provide an operational definition of all dependent measures utilized in their studies.

Authors of all of these studies stated what their independent measures were. Authors of six studies (Cooley, 1995; Kinsler, 2011; Mcloughlin & Noltemeyer, 2010; Noltemeyer & Mcloughlin, 2010a; Pei et al., 2013; Rausch & Skiba, 2004) failed to provide an operational definition of all of their independent measures.

Table 23 displays a description of all dependent and independent measures utilized in these studies.

Table 23: Dependent and independent measures across state level studies.

Study	Dependent Measures	Independent Measures
Afinson and colleagues, 2010	Suspension; Expulsion; Disciplinary incident	Race
Christle & Nelson, 2004	Suspension rate	Board violation; Law violation; Enrollment; Attendance rate; Achievement scores; Retention rate; Percent male; Percent Caucasian; Percent free and reduced lunch; Drop out rate; Per pupil expenditure; Teacher – student ratio; Average teacher salary
Cooley, 1995	Suspension or expulsion; Reason for suspension or expulsion	Race; Gender; Special education status; Disability category; Grade
Eitle & Eitle, 2004	Black suspension imbalance	School characteristics (school culture, school organizational structure, social milieu, student disorder rate); District and residential factors (county index crime rate, school district segregation, resident segregation)
Gregory and colleagues, 2011	Unduplicated short term suspension	School demographics; Student perception of school climate
Hemphill & Hargreaves, 2009	School response to problem behaviors	Anti-social behavior; Violent behavior
Hemphill and colleagues, 2014	School suspension	Anti-social behavior; Violent behavior; Low school commitment; Academic failure; Rebelliousness; Transitions and mobility; Age; Gender; Family welfare status; Low parent education; School type; School size; School SES; Supportive teacher relations

Study	Dependent Measures	Independent Measures
Kinsler, 2011	Extensive or intensive punishment	Race; Gender; Physical disability; Learning disability; Free and reduced lunch status; Lagged math score; Previous offense; Multiple offense; Principal race; Teacher race; Teacher gender
Krezmien and colleagues, 2006	Number of students suspended; Unduplicated suspension	Race; Disability category
Mcloughlin & Noltemeyer, 2010	Overall use of suspension	Percent African American teachers in school; Total suspensions per 1000 students; Percent economically disadvantaged; Percent African American attending school; Instructional expenditures; Suspension per 100 White students; Suspension per 100 Black students; Office discipline rate per 100 students; Relative risk ratio
Noltemeyer & Mcloughlin, 2010a	Expulsion; Out of school suspension; Other disciplinary action	Ethnicity; Time
Noltemeyer & Mcloughlin, 2010b	Expulsion; Out of school suspension; Other disciplinary activities	School typology; Ethnicity
Pei and colleagues, 2013	Discipline type	Student infraction; Number of discipline records; Racial diversity index; Ethnicity
Rausch & Skiba, 2004	Suspension rates; Expulsion rates; Type of incident	Locale; School level; Race; Percent passing state assessment
Vincent and colleauges, 2012	In school suspension; Out of school suspension; Removal to alternative education; Truancy; Expulsion	Race/ ethnicity; Disability status
Wang and colleagues, 2005	Academic achievement; Attendance; Disciplinary problems	Delinquency status

Large Scale Databases. Authors of all of the studies stated their dependent measures. Dependent measures were operationalized by authors of all but three articles (Losen et al., 2003; Smith-McKeever & Gao, 2010; Wagner et al., 2005).

Authors in all of the studies stated what their independent measures were. Independent measures were operationalized by authors of all but one study (Davis Ganao et al., 2013).

Table 24 displays a summary of the dependent and independent measures used in each study.

Table 24: Dependent and independent measures across studies that utilized large scale databases.

Study	Dependent Measures	Independent Measures
Achilles and colleagues, 2007	History of school exclusion	Disability; Age, Ethnicity; Family structure; SES risk; Urbanicity; Parent involvement with school; Child school experience; Parent satisfaction with school; Extracurricular involvement; Age of disability onset; Lapse in services
Bowman-Perrot and colleagues, 2013	Student disciplinary exclusion	Student demographic characteristics; Family/household characteristics; Student academic and social skills; School characteristics
Duran and colleagues, 2013	Social skills; Disciplinary exclusion	Age; Gender; Ethnicity; Primary disability; Household income
Gage and colleagues, 2012	History of Arrest	Gender; Hyperactivity; Classroom behavior; Income; Education level of head of household; Ethnicity; Urbanicity; History of suspension in elementary school
Davis Ganao and colleagues, 2013	Ever suspended	Individual factors; Family factors; Community factors
Hannon and colleagues, 2013	Suspension	Skin tone; Gender; Socioeconomic status; Test scores; Urbanicity; Age
Heard, 2007	School engagement	Family structure
Kaushal & Nepomnyaschy, 2009	Participation in extracurricular activities; Giftedness; Repeated a grade or held back; Suspended, expelled, or excluded from school	Sum of all assets; Family income; Checking/savings account; Home ownership Race; Parent age; Parent education; Living with two parents; Number of kids in household; Presence of other adults; Residence in metropolitan area; Region of residence; Child's gender; Child's age; Neighborhood safety
Losen and colleagues, 2003	Suspension rate; Expulsion rate	Percent of secondary teachers with less than 3 years; Percent of classes taught by teacher without a major in the subject; Percent of teachers without a certificate in the major; Fourth and eighth grade achievement scores; Percent who taught without a major in the subject

Study	Dependent Measures	Independent Measures
Skiba and colleagues, 2011	Office discipline infraction; Administrative decision	Race
Smith-McKeever & Gao, 2010	School suspension	Criminal justice involvement; Depression; Alcohol consumption; Marijuana and / or hashish use; Cocaine use
Tobin & Vincent, 2011	Discipline referral leading to out of school suspension or expulsion	Race; Level of positive behavioral support implementation
Vincent & Tobin, 2011	Out of school suspension; Expulsion	Level of school-wide positive behavioral support implementation; Ethnicity
Wagner and colleagues, 2005	Social skills; Cognitive skills; Academic achievement; Income; Past educational experiences	Disability classification
Wallace and colleagues, 2008	School disciplinary action	Race / ethnicity; Gender
Wei, Yu, & Shauer, 2014	Academic achievement; Social skills; School record or behavior problems	Disability classification
Welch & Payne, 2012	Expulsion; Suspension; In-school suspension; Automatic suspension or expulsion	Racial threat; Socioeconomic status; Percent Hispanic students; Percent male students; Principal supervision; Perception of administration; Discipline training; Student delinquency and drug use; Perceived school risk; Teacher victimization; Poverty and disorganization Urbanicity
Wright and colleagues, 2014	Out of school suspension	Problem behavior; School-related measures
Zhang and colleagues, 2004	Removal by school personnel; Short term suspension; Long term suspension	Region; Race; Disability type; State

Summary. Authors of all of these studies stated their dependent and independent measures. Authors of fifteen studies failed to provide an operational definition of their dependent measures, and authors of twelve articles failed to provide an operational definition of their independent measures. This was problematic since failure to operationally define dependent and independent variables does not allow for valid, consistent interpretation of results and replication in future studies (Gersten et al., 2005; Horner et al., 2005).

Data Collection

Gersten and colleagues (2005) described quality indicators for assessing the quality of data collection procedures. Sufficient detail must be provided about data collection procedures for replication in future studies. If data collection took place through observation and rating of behavior, authors must describe the interrater reliability of their procedures to ensure that data was coded correctly during data collection (Gersten et al., 2005). I reviewed each of the studies to determine if their data collection procedures were detailed enough to allow for replication.

School Level. Authors of the seven school level studies described data collection procedures. Data collection procedures found in three articles (Petras et al., 2011; Skiba et al., Peterson, 2002; Skiba et al., 1997) were sound. Petra and colleagues (2011) provided the exact name of the structured measure used. They stated how it was given, when it was given, and the test / re-test reliability of the instrument. They provided the reader with a resource to access the information. Petras and colleagues (2011) provided detailed descriptions of how they obtained data from the city's public school record system. This was an example of authors who met the quality indicators.

Three articles (Constenbader & Markson, 1998; Mattison & Aber, 2007; Shirley & Cornell, 2011) contained problematic descriptions of the research procedures. All three authors utilized surveys and stated the location where the survey took place. Information was limited regarding the actual administration of the survey and whether this occurred using a standardized procedure.

Kaplan and Cornell (2005) provided a detailed account on how individuals were trained to rate threats on their data collection measure. There was no mention as to the interrater reliability to know that the threats were classified correctly by study participants.

District Level. Authors of all but two articles (Arcia, 2007b; Hinjosa, 2008) provided adequate descriptions of data collection procedures. Arcia (2007b) lacked a data collection section. Hinjosa (2008) stated that data was collected by examining survey data routinely collected by the district. There was limited information regarding the administration of the survey. It was unknown whether a standardized set of directions was given to all participants or whether questions were read to participants to ensure understanding of each item.

State Level. Authors of two articles (Afinson et al., 2010; Gregory et al., 2011) failed to provide sufficient information about their data collection procedures. Afinson and colleagues (2010), provided adequate information about the collection of state level data. Procedures used to collect information from focus groups was unclear. Gregory and colleagues (2011), did not provide a clear description of the procedures used to collect survey data from students.

Large Scale Databases. Authors of all nineteen studies provided a detailed description of data collection procedures.

Summary. Authors of fifty-three out of the sixty-one articles provided adequate descriptions of their data collection procedures. The authors of seven articles failed to provide detailed descriptions of data collection procedures that would allow for replication in future studies. This was problematic based on the quality indicators that were established for this section (Gersten et al., 2005).

Data Analysis

I reviewed the data analysis portion of each study to examine multiple facets of data analysis. These components included: 1) Sample size 2) Descriptive statistics 3) Statistical analysis 4) Effect size and confidence intervals and 5) Power analysis methods. The importance of each of these components to data analysis will be described followed by a description as to how the authors incorporated each of these components into the data analysis portions of their work.

Sample Size. The sample size of each study was examined to determine whether authors included a large enough sample size in each study. Sample size was examined in order to determine whether there was a sufficient number of participants in each study and whether or not there was a sufficient number of participants in each subgroup within the study.

School Level. Authors of all but one study (Constenbadder & Markson, 1998) included a sufficient number of individuals in the sample size. The area of concern with Costenbader and Markson (1998) was the unequal sample sizes of the groups compared and the small number of individuals within one group in this study. The authors of this

study included the following groups of students: 252 students who were never suspended, 112 students who received internal suspension, and 35 students who received external suspension. The group of 35 students serving in the externally suspended group was determined to have an insufficient number of participants.

District Level. Authors of all but three studies (Blake et al., 2001; Goran & Gage, 2011; Hinjosa, 2008) provided evidence of a sufficient sample size for the total sample and all groups analyzed from within the sample. Blake and colleagues (2011) analyzed results by disciplinary infractions, and some of the groups contained cell sample sizes with as few as 12-16 students in the group. This could prove problematic for data analysis and interpretation. Goran and Gage (2011) evidenced a similar problem in that the students with emotional disabilities group only had 25 students in the group. Hinjosa (2008) did not state the total number of individuals who participated in the study. This made it impossible to know whether an adequate sample size was obtained.

State Level. Authors of all sixteen state level studies (Afinson et al., 2010; Christle & Nelson, 2004; Cooley, 1995; Eitle & Eitle, 2004; Gregory et al., 2011; Hemphill & Hargreaves, 2009; Hemphill & Hargreavs, 2014; Kinsler, 2011; Krezmien et al., 2006; Mcloughlin & Noltemeyer, 2010; Noltemeyer & Mcloughlin, 2010z; Noltemeyer & Mcloughlin, 2010b; Pei et al., 2013; Rausch & Skiba, 2004; Vincent et al., 2012; Wang et al., 2005) contained a sufficient number of participants.

Large Scale Databases. Authors of all nineteen studies (Achilles et al., 2007; Bowman-Perrot et al., 2013; Duran et al., 2013; Gage et al., 2012; Davis Ganao et al., 2013; Hannon et al., 2013; Heard, 2007; Kaushal & Nepomnyaschy, 2009; Losen et al., 2003; Skiba et al., 2011; Smith-McKeever & Gao, 2010; Tobin & Vincent, 2011; Vincent

& Tobin, 2011; Wagner et al., 2005; Wallace et al., 2008; Wei et al., 2014; Welch & Payne, 2012; Wright et al., 2014; Zhang et al., 2004) that utilized large scale databased contained a sufficient number of participants.

Summary. Authors of all but four studies (Blake et al., 2011; Costenbader & Markson, 1998; Goran & Gage, 2011; Hinjosa, 2008) included evidence of a sufficient number of participants within their studies.

Power Analysis.

School Level. None of the authors that utilized correlational designs completed a power analysis.

District Level. None of the authors that utilized correlational designs completed a power analysis.

State Level. Authors of one study (Noltemeyer & Mcloughlin, 2010b) completed a power analysis. These authors indicated that they completed Pillai's Trace.

Large Scale Databases. None of the authors that utilized correlational designs completed a power analysis.

Summary. Authors of only one study (Noltemeyer & Mcloughlin, 2010b) included a power analysis within their article.

Descriptive Statistics. I examined each study to determine whether or not the authors considered the descriptive data obtained in their studies prior to statistical analysis. I also examined each study to determine whether the authors examined data to determine if it had a normal distribution and whether the authors described how outliers were accounted for during statistical analysis.

School Level. Authors of all but three studies (Constenbader & Markson, 1998; Shirley & Cornell, 2011; Skiba et al., 2002) detailed descriptive procedures in their analysis. None of the authors described processes for normalizing data. Petras and colleagues (2011) were the only authors who described how outliers were accounted for during statistical analysis.

District Level. Authors of all but four studies (Fasko et al., 1995; Hinjosa, 2008; McFadden et al., 1992; Rouse et al., 2011) explained descriptive procedures prior to statistical analysis. Anderson and colleagues (2007) were the only authors to describe how their data was normalized. None of the authors described their statistical treatment of outliers.

State Level. Cooley (1995) was the only author who failed to provide an explanation of the descriptive procedures involved in the dataset utilized for this study. Noltemeyer and Mcloughlin (2010b) were the only authors to consider normalization of data. Authors of three studies (Gregory et a., 2011; Kinsler, 2011; Noltemeyer & Mcloughlin, 2010b) presented information on the statistical treatment of outliers.

Large Scale Databases. Authors of all but two studies (Losen et al., 2003; Zhang et al., 2004) provided information on descriptive procedures. Two authors (Gage et al., 2013; Wagner et al., 2005) described procedures as to the normalization of data. Four authors (Achilles et al., 2007; Duran et al., 2031; Vincent & Tobin, 2011; Welch & Payne, 2012) described the statistical treatment of outliers.

Summary. Authors of fifty articles provided information about the descriptive procedures utilized in their research study. Only four studies described any procedures

used to normalize data, while only eight studies considered the statistical treatment of outliers.

Statistical Analysis. Each study was examined to understand the degree to which appropriate univariate and multivariate statistics were utilized for data analysis. Utilization of correct statistical procedures is critical for obtaining appropriate results following a research study. Failure to use the correct statistics to interpret results presents as a huge methodological flaw that can seriously harm the validity and interpretation of ones findings.

School Level. All but one of the school level studies (Skiba et al., 1997) contained an analysis that utilized univariate statistics. Authors of one study (Constenbader & Markson, 1998) failed to utilize the appropriate univariate statistic in their research study. Four authors (Constenbader & Markson, 1998; Kaplan & Cornell, 2005; Mattison & Aber, 2007; Shirley & Cornell, 2011) utilized multivariate statistics in their research. All four of these authors applied the correct multivariate statistics given their research questions, research designs, and available data. Skiba and colleages (2002) were the only authors to describe how group differences were controlled for during data analysis.

District Level. Authors of all but three studies (Blake et al., 2011; Fasko et al., 1995; Goran & Gage, 2011) completed univariate analyses on data within their studies. Authors of two studies (Mendez, 2003; Mendez & Knoff, 2003) failed to utilize the correct univariate statistics given their research questions, design, and data. Four authors (Blake et al., 2011; Goran & Gage, 2011; Nichols, 2004; Sullivan et al., 2013) utilized multivariate statistics and used them appropriately in their research. Authors of five

studies (Bruns & Moore, 2005; McFadden et al., 1992; Mendez, 2003; Mendez & Knoff, 2003; Mendez, 2002; Skiba et al., 1997) detailed steps taken to control for group differences in statistical analysis.

State Level. Authors of all but four state level studies (Afinson et al., 2010; Mcloughlin & Noltemeyer, 2010; Pei et al., 2013; Rausch & Skiba, 2004) described univariate statistical analyses within their studies. Three of the authors that utilized univariate analyses (Christle & Nelson, 2004; Vincent et al., 2012; Wang et al., 2005) did not complete appropriate analyses given their research design, questions, and datasets. Authors of eight studies (Christle & Nelson, 2004; Eitle & Eitle, 2004; Gregory et al., 2011; Kinsler et al., 2011; Krezmien et al., 2006; Mcloughlin & Noltemeyer, 2010; Noltemeyer & Mcloughlin 2010a, 2010b) utilized multivariate analyses, and did so correctly, within their articles. Authors of three studies (Cooley, 1995; Eitle & Eitle, 2004; Noltemeyer & Mcloughlin, 2010b) described procedures utilized to control for group differences.

Large Scale Databases. Authors of all but two studies (Welch & Payne, 2012; Zhang et al., 2004) included univariate analyses within their studies. Three of the authors who utilized univariate analyses (Davis Ganao et al., 2013; Kaushal & Nepomnyaschy, 2009; Wagner et al., 2005) did so incorrectly. All but seven authors (Achilles et al., 2007; Gage et al., 2012; Heard, 2007; Kaushal & Nepomnyaschy, 2009; Losen et al., 2003; Wallace et al., 2008; Wei et al., 2014) presented multivariate analyses in their studies. Two of those authors (Davis Ganao et al., 2013; Wagner et al., 2005) did not complete the correct multivariate analyses. Authors of four studies (Losen et al., 2003;

Wei et al., 2014; Wright et al., 2014; Zhang et al., 2004) described procedures to control for group differences during statistical analysis.

Summary. This portion of the paper examined the degree to which appropriate statistics were utilized within the research results section of each study. The correct use of statistical analyses is important because without the proper use of statistics, the validity of an author's research findings is seriously called into question. Forty-one of the fifty-one authors who utilized univariate statistics did so appropriately within their articles, and twenty-seven of the twenty-nine authors who utilized multivariate statistics did so appropriately.

Unit of Analysis. Ensuring that data analysis occurs on the correct unit of analysis is a critical component to any research study. Failure to conduct one's data analysis on the appropriate unit of analysis can lead to inaccuracies in findings.

School Level. Authors of all seven articles (Constenbader & Markson, 1998; Kaplan & Cornell, 2005; Mattison & Aber, 2007; Petras et al., 2001; Shirley & Cornell, 2011; Skiba et al., 2002; Skiba et al., 1997) completed statistical analysis on the correct unit of analysis.

District Level. Authors of all but two studies (Hinjosa, 2008; Skiba et al., 1997) completed data analysis on the appropriate unit of analysis. Knowledge as to whether Hinjosa (2008) completed data analysis on the correct unit of analysis was impossible to determine because no information was provided as to the number of individuals or cases utilized as research participants. Skiba and colleagues (1997) failed to consider school level factors in data analysis.

State Level. Authors of all but one study (Pei et al., 2013) completed data analysis on the appropriate unit of analysis. Pei and colleagues (2013) did not complete sophisticated data analysis requiring analysis on a particular unit.

Large Scale Databases. Authors of all but three studies (Kaushal & Nepomnyaschy, 2009; Losen et al., 2003; Welch & Payne, 2012) completed data analysis on the appropriate unit. Kaushal and Nepomnyaschy (2009) completed analysis on children yet collected data relative to households. Losen and colleagues (2003) and Welch and Payne (2012) presented results in a manner that made it impossible to determine the unit of analysis in the study.

Summary. Authors of fifty-four of the studies included in this paper conducted statistical analysis on the appropriate unit of analysis.

Effect Size and Confidence Intervals.

School Level. Authors of four articles (Kaplan & Cornell, 2005; Mattison & Aber, 2007; Petras et al., 2011; Skiba et al., 2002) reported the effect size for their statistical analysis. Three of these authors (Kaplan & Cornell, 2005; Petras et al., 2011; Skiba et al., 2002) correctly interpreted the effect size reported. Authors of only one study (Kaplan & Cornell, 2005) provided the confidence interval for the effect size and interpreted this confidence interval correctly.

District Level. Authors of nine articles (Anderson et al., 2007; Arcia, 2007a; Blake et al., 2011; Bruns & Moore, 2005; Goran & Gage, 2011; Hinjosa, 2008; Hoffman, 2014; Rouse et al., 2011; Theriot et al., 2010) provided effect sizes for their statistical analyses. All but one of these authors (Blake et al., 2011) provided an adequate

interpretation of this effect size. Confidence intervals for the effect size calculations were provided and interpreted by authors of two articles (Hoffman, 2014; Rouse et al., 2011).

State Level. Authors of seven studies (Gregory et al., 2011; Hemphill et al., 2014; Krezmien et al., 2006; Mcloughlin & Noltemeyer, 2010; Noltemeyer & Mcloughlin, 2010a; Noltemeyer & Mcloughlin, 2010b; Vincent et al., 2010) stated the effect size for their statistics. Authors of all but one of the studies (Vincent et al., 2012) interpreted their effect sizes correctly. Confidence intervals and interpretations were provided by authors of two articles (Hemphill et al., 2014; Krezmien et al., 2006).

Large Scale Databases. Authors of all but four studies (Davis Ganao et al., 2013; Losen et al., 2003; Vincent & Tobin, 2011; Wagner et al., 2005) reported effect sizes for their statistics. Authors of all but three of the articles (Achilles et al., 2007; Wei et al., 2014; Zhang et al., 2014) correctly interpreted the effect sizes that were reported. None of the authors reported the confidence intervals or interpretations of confidence intervals in their articles.

Summary. Authors of thirty-five studies examined effect sizes for their statistics. Twenty-nine of those authors interpreted their effect sizes correctly. Five authors reported and interpreted their confidence intervals correctly.

Rationale for Present Study

Study 1

Studying individual factors that influence suspension rates has led to only a minimal understanding as to which factors influence suspension rates. It can be argued that examining individual level factors, in the absence of school level factors, leaves researchers with an incomplete picture as to what is most likely to influence suspension

rates in public schools. Further, studying only individual factors is problematic as these factors are static and cannot be changed by school personnel. Studying school level factors in isolation is also problematic. While studies of school level factors have changed our understanding of the relationship between school characteristics and suspension rates, these studies have not enabled the field to understand how the school factors and individual factors interact to exacerbate or ameliorate risk of disciplinary suspensions.

Studies that have examined both individual and school level factors have examined this issue using data from schools (Petras et al., 2011; Sullivan et al., 2013). Additional research is needed to expand the use of multilevel modeling at the state level using additional factors not considered by these researchers.

The purpose of the current study is to investigate disciplinary suspension practices in one state using a multilevel model This study will add to this existing research by including gender, race, and disability status as level one predictors to gain a better understanding of how individual and school level factors interact to influence suspension rates. It will also include eleven school level factors in order to better understand the school level factors that influence disproportionate suspension rates. This study examined one research question: *How do school and individual level factors affect the risk of suspension by race, by gender, and by disability status?*

Study 2

Even though authors have studied the content of school discipline policies and differences in infractions between the policies themselves, no study to date has examined the relationship between school discipline policies and school suspension rates in a

single study. Since many states are currently mandating that schools revise discipline policies to move away from zero tolerance approaches, it is important for researchers to know which policies may lead to lower suspension rates before individuals can advocate for any change in practice. As much of the research has focused on factors unique to students, such as race and disability status, rather than school factors, a greater understanding as to what policy factors influence suspension rates is needed.

The purpose of this research study is to examine both suspension practices and school disciplinary policies in order to understand the relationship school policy and student suspension rates. This manuscript proposes two discrete but integrated studies. Study one address the question: *What are the current suspension outcomes in Maryland public schools?* Study 2 addresses two questions: *What types of disciplinary policies do the districts employ?* And *Is there a relationship between disciplinary policies and disciplinary outcomes?*

CHAPTER III

STUDY ONE: INDIVIDUAL AND SCHOOL LEVEL FACTORS CONTRIBUTING TO DISPROPORTIONATE SUSPENSION RATES: A MULITLEVEL ANALYSIS OF ONE STATE

Abstract

Data from middle schools (n=219), high schools (n=200), and combined middle and high schools (n=20) were used for this study in order to examine individual and school level factors associated with risk of suspension for specific groups of students. Results indicate that gender, race, and disability status were individual level factors associated with an increased risk of suspension. Multiple school level factors were also found to be associated with an increased risk of suspension including school enrollment, attendance, mobility, the percent of highly qualified teachers, the percent of students receiving free and reduced priced meals, the percent of special education students, Title One status, the student to teacher ratio, English Language Arts scores, and the percent of White students in the school. Implications and directions for future research are discussed.

Introduction

During the 2009-2010 school year, over three million students were suspended from United States public schools (Losen & Gillespie, 2012). The lifelong consequences of suspension from school range from dropping out of high school to involvement with the justice system (Losen & Gillespie 2012). Because of the high personal costs associated with suspensions from school, it is critical for the field to better understand the individual and school factors that contribute to the use of school suspensions.

Understanding who is being suspended and the individual and school factors associated with suspensions is critical in order to understand current disciplinary practices and to limit disproportionate treatment of marginalized groups. More research that examines disciplinary practices using multilevel models is necessary to adequately understand and address the overuse of school suspensions and to improve disciplinary practices in schools.

Individual Factors

The majority of studies examining school suspension rates have focused on individual student factors associated with disproportionate suspension rates. Most studies examined race (Hoffman, 2014; Krezmien, Leone, & Achilles, 2006; Petras, Masyn, Buckley, Ialongo, & Kellam, 2011; Wright, Morgan, Coyne, Beaver, & Barnes, 2014), gender (Hemphill, Plenty, Herrenkohl, Toumbourou, & Catalano, 2014; Sullivan, Klingbeil, & Van Norman, 2013; Wright et al., 2014) and disability status (Goran & Gage, 2011; Krezmien et al., 2006; Zhang, Katsiyannis, & Herbst, 2004).

African American students have consistently been the racial group with the highest risk of being suspended (Achilles, McLaughlin, & Croninger, 2007; Krezmien et al., 2006; Petras et al., 2011; Zhang et al., 2004). There were mixed findings related to the risk for Latino students. Some authors (Anfinson, Autumn, Lehr, Riestenberg, & Scullin, 2010; Vincent, Sprague, & Tobin, 2012; Zhang et al., 2004) reported that Latino students were overrepresented in school suspensions while others researchers (Cooley, 1995; Krezmien et al., 2006) reported that they were suspended at rates proportional to the rates of White students. McFadden and colleagues (1992) reported that Latino students were less likely to be suspended than White students. Authors (Anfinson et al.,

2010; Krezmien et al., 2006; Wallace, Goodkind, Wallace, & Bachman, 2008; Zhang Katsiyannis, & Herbst, 2004) also found that Native American students were disproportionately suspended from school.

Students with disabilities were more likely to be suspended than students without disabilities (Goran & Gage, 2011; Mendez, 2003; Krezmien et al., 2006; Sullivan et al., 2013; Vincent et al., 2012). Students with emotional and behavioral disorders had the highest risk of suspension (Achilles et al., 2007; Goran & Gage, 2011; Krezmien et al., 2006; Wagner et al., 2005; Zhang et al., 2004)

Authors of only a few studies examined the impact of race and disability status on risk of suspension (Achilles et al., 2007; Krezmien et al., 2006; Sullivan et al., 2013; Zhang et al., 2004). Authors (Krezmien et al., 2006; Sullivan et al., 2013; Zhang et al., 2004) found that African American students with disabilities had significantly higher risks for suspension than White students with the same disabilities. Krezmien and colleagues (2006) found that African American students with emotional and behavioral disorders had the highest risk of suspension. They also found disproportionate rates existed for African American students with other health impairments and learning disabilities. Achilles and colleagues (2007) reported that African American students with emotional and behavioral disorders were disproportionately suspended; however, they indicated that this difference disappeared once family structure and socio-economic status were controlled for.

Male students have also been consistently more likely to be suspended than female students (Achilles et al., 2007; Gage, Josephs, & Lunde, 2012; McFadden, Marsh, Price, & Hwang, 1992; Petras et al., 2011; Sullivan et al., 2013; & Wright et al., 2014).

Petras and colleagues (2011) reported that male students were also more likely to be suspended from school at an earlier age compared to females.

School Factors

Fewer authors have examined school level factors associated with risk of suspension. Researchers reported that secondary schools suspend more students than primary schools (Arcia, 2007b; Butler, Lewis, Moore, & Scott, 2012; Eitle & Eitle, 2004; Fasko, Grubb, & Osborne, 1995; Mendez & Knoff, 2003). Achilles and colleagues (2007) reported that schools located in urban settings place students at an increased risk of suspension compared to schools in rural settings. Cooley (1995) reported that school size was not associated with an increased risk of suspension.

Schools with higher academic achievement were also found to have lower suspension rates than schools with lower academic achievement (Arcia, 2007a; Goran & Gage, 2011; Hemphill et al., 2014; Losen et al., 2003; & Wright et al., 2014). Christle and colleagues (2004) reported that schools with higher retention rates also experienced higher suspension rates. Increased dropout rates (Christle, Nelson, & Jolivette, 2004), lower school attendance rates (Bruns, Moore, Stephan, Pruitt, & Xinst, 2005; Christle et al., 2004), and increased use of zero tolerance policies (Hoffman, 2014) were associated with increased suspension rates. School districts who had higher teacher quality and increased numbers of teachers teaching in their field had lower suspension rates (Losen et al., 2003), and schools with teachers holding a positive view of school administration had decreased rates of suspension (Welch & Payne, 2012). Finally, student mobility had a positive correlation with suspension rates (Mendez, Knoff, & Ferron, 2002).

Multilevel Factors

Individual Level Factors

Few authors (Petras et al., 2011; Skiba et al., 2014; Sullivan et al., 2013; Sullivan, Van Norman, & Klingbeil, 2014) examined both student and school level factors in a multilevel analysis. Minority status (Petras et al., 2011; Skiba et al., 2014; Sullivan et al., 2013; Sullivan et al., 2014), disability status (Skiba et al., 2014; Sullivan et al., 2013; Sullivan et al., 2014), and individual student socioeconomic status (Petras et al., 2011; Skiba et al., 2014; Sullivan et al., 2013; Sullivan et al., 2014) were the individual level factors associated with increased risk for suspension within a multilevel model.

School Level Factors

Sullivan and colleagues (2013, 2014) found that suspension rates for non-drug / weapons offenses was the only school level factor that predicted higher suspension rates for students with emotional disturbance in thirty-nine schools. Skiba and colleagues (2014) found the percentage of White students in the school and a principal's belief in preventative alternatives to suspension and expulsion were associated with lower risk of suspension.

The research on school suspensions is extensive, but we still need additional multilevel research to understand the individual and school level factors associated with suspensions. In particular, it is important to be conduct a multilevel investigation in a large state with a diverse student population.

Purpose

The purpose of this study is to investigate disciplinary suspension practices in one large, diverse state using a multilevel model. This study will add to this existing research

by including gender, race, and disability status as level one predictors to gain a better understanding of how individual and school level factors interact to influence suspension rates. It will also include eleven school level factors in order to better understand the school level factors that influence disproportionate suspension rates. This study was guided by one research question: How do school and individual level factors affect the risk of suspension by race, by gender, and by disability status?

Method

Participants

I obtained a list of all of the public, secondary schools in the state from the Maryland Department of Education's website. All public, secondary schools in the state of Maryland were included in the initial data set. This initial sample contained students from middle schools (n=223 schools), high schools (n=205 school), and combined middle and high schools (n=32 schools). I limited this analysis to secondary schools because secondary schools account for nearly all of the suspensions in school districts (Arcia, 2007b, Eitle & Eitle, 2004; Fasko et al., 1995; & Mendez & Knoff, 2003). Alternative schools and schools serving only students with disabilities were excluded from this data set as those schools serve a different population than traditional, public secondary schools. Once this data set was compiled, twenty-one schools without a complete set of school level data were removed from this sample prior to data analysis. Removing these schools resulted in a final sample of middle schools (n= 219 schools), high schools (n=200 schools) and middle / high schools (n=20). Demographic information is displayed in Table 25.

Table 25: Demographic information by grade.

	7	8	9	10	11	12	Total
Total Enrollment (September 30, 2012)	62,159	60,908	71,360	64,841	60,657	59,978	379,903
Gender							
Males	31,861	31,255	37,171	33,119	30,209	30,136	193,751
Females	30,298	29,653	34,189	31,722	30,448	29,842	186,152
Race							
American Indian/ Alaska Native	174	157	208	174	211	249	1,173
Asian	3,732	3,500	3,815	3,863	3,770	3,736	22,416
Black /African American	22,141	21,932	27,459	23,540	20,940	20,843	136,905
Hispanic / Latino	7,185	6,797	8,765	7,161	5,919	5,460	41,287
Hawaiian / Pacific Islander	88	57	89	87	82	56	459
White	26,436	26,294	28,762	27,903	27,965	27,980	165,340
Two or More Races	2,403	2,171	2,262	2,063	1,770	1,654	12,323
Students with Disabilities	7,626	6,620	10,213	7,083	6,290	5,112	42,944

Data Collection

Data was obtained from the Maryland Report Card (Maryland State Department of Education, 2015) and Maryland Public School Suspensions by School and Major Offense Out of School Suspensions and Expulsion 2012-2013 (Maryland State Department of Education, 2013).

Maryland Report Card

Data on school characteristics was obtained from the Maryland State Report Card (Maryland State Department of Education, 2015). These data included the following: school enrollment, attendance rate, mobility, percent of classes taught by highly qualified teachers, percent of students receiving special education services, percent of students receiving free and reduced priced meals, percent of students achieving proficiency on the state mathematics and reading / English Language Arts exam, Title One status, the percent of White students in the school, and the student to teacher ratio. There was a portion of the State Report Card that contained zipped data files that are available for download. These files were downloaded as Microsoft Excel files, cut and pasted into one Microsoft Excel file by school, and imported into IBM SPSS Statistics 23.

Data relative to enrollment by race, by gender, and by disability status was obtained from the Maryland State Report Card and was entered into Microsoft Excel by cutting and pasting the information from the Maryland State Report Card directly into the Microsoft Excel spreadsheet. Data from the spreadsheet was transferred into IBM SPSS Statistics 23.

State Reports of Suspension and Expulsion

Data relative to out of school suspension by race, by gender, by disability status, and by offense was obtained from the Maryland Public Schools Suspensions by School and Major Offense Category Out of School Suspensions and Expulsions 2012-2013 (Maryland State Department of Education, 2013). The data was entered into a Microsoft Excel spreadsheet by copying and pasting the data directly from this file. Once it was entered into Microsoft Excel, it was imported into IBM SPSS Statistics 23.

Data Accuracy

The data from the Maryland State Report card is available in a zipped Microsoft Excel spreadsheet file. The data was downloaded directly from the website as a Microsoft Excel file and was cut and pasted from this file into a Microsoft Excel file that had all of the data from each school. Once all of the data was in one file, and it was entered into IBM SPSS Statistics 23.

Data relative to enrollment by race, by gender, and by disability status was obtained from the Maryland State Report Card and was cut and pasted from the Maryland State Report Card directly into a Microsoft Excel spreadsheet that was later transferred into IBM SPSS 23. The data from the Maryland Public Schools Suspensions by School and Major Offense Category Out of School Suspensions and Expulsions 2012-2013 was entered into a Microsoft Excel spreadsheet by copying and pasting the information directly from the document into Microsoft Excel. These data were transferred into IBM SPSS 23.

All of the data included in this study were checked for accuracy by a university professor who was not responsible for the initial import of data into the spreadsheet. This

involved looking at the original line on the data sheet and checking the item in IBM SPSS Statistics 23. For example, Allegany County was the first school district whose data was entered into the Microsoft Excel spreadsheet and was the first entry in the database located in IBM SPSS Statistics 23. The first school alphabetically in Allegany County is Allegany High School. The first number recorded in the file next to Allegany High School was the total number of suspensions. The university professor looked at the total number of suspensions displayed in IBM SPSS Statistics 23 and compared in to the number provided in the Maryland Public Schools Suspensions by School and Major Offense Category Out of School Suspensions and Expulsions 2012-2013. This process repeated for each line on the data sheet. Any number that was found to be inaccurate was recorded. The primary investigator and university professor examined all discrepancies and agreed on the correct number by examining the data together and agreeing on what number was correct.

Criterion Variable

Suspensions

Out of school suspension data was taken from the Maryland Public School Suspensions by School and Major Offense Category Out of School Suspensions and Expulsions 2012-2013 (Maryland State Department of Education, 2013). Out of school suspension refers to removal from the school setting. Out of school suspension can occur for one day or multiple days. The data in this data set was count data and included the total number of suspensions.

Predictor Variables

There were two levels of predictor variables included in this data analysis: individual level variables and school level variables.

Individual Level Variables.

There were three individual level variables included in data analysis. These included gender, race, and disability status.

Gender. This was the number of individuals in each school identified as male or female.

Race. Race was categorized as one of the following: American Indian / Alaska Native, Asian, Black / African American, White, Hispanic, Native Hawaiian or Other Pacific Island, or two or more races. The number of students identified as White or Black / African American was included in this study. American Indian / Alaska Native, Native Hawaiian or Other Pacific Islander, and students identified as two or more races were excluded from this study due to the low numbers of students identified in these categories. Hispanic students were excluded from analysis due to the fact that low numbers of these students were found in many schools which made data analysis difficult.

Disability Status. The total number of students in each school with a disability according to the Individuals with Disabilities Education Act was recorded.

School Level Variables

Eleven school level variables were selected for analysis. These include: school enrollment, attendance rate, mobility, percent of classes not taught by highly qualified teachers, percent of students receiving special education services, percent of students

receiving free and reduced priced meals, percent of students achieving proficiency on the state mathematics and reading / English exam, Title One status, the percent of white students in the school, and the student to teacher ratio. Table 26 displays an operational definition of each school level variable.

Table 26: Operational definition of school level variables.

Term	**Operational Definition**
School enrollment	The number of students enrolled
Attendance rate	Average percent of students in school for at least half of the day each day of the year
Mobility	Percent of students who entered school and left for any reason after the first day of school
Percent of classes not taught by highly qualified teachers	Percent of teachers who had a standard certification in their field based on the NCLB
Percent of students receiving special education services	Percent of students who qualified for special education services under the IDEA
Percent of students receiving free or reduced priced meals	Percent of students in each school with FARM
Proficiency on the state math exam	Percent of students who scored at the basic level on grade level math exams in 2013
Proficiency on the state reading / English exam	Percent of students who scored at the basic level on grade level reading / ELA exams in 2013
Title One Status	A binary variable. Classified as (1) accepted any Title One funds or (0) did not accept Title One funds
Percent of White Students	Percent of White students in each school
Student to teacher ratio	Number of instructional staff at each school per 1,000 students

(Maryland State Department of Education, 2015)

Data Analysis

Three separate data analyses occurred using HLM 6.03 (Raudenbush, Bryk, & Congdon, 2004). All analyses occurred using HLM2 which is the appropriate model to select when examining two levels with one dependent measure (Garson, 2012). Hierarchical general linear modeling was used as the method of analysis. This is the

appropriate analysis to use because two levels of an independent measure were examined using count data as a dependent measure that is not normally distributed.

Suspension by Race

Data for race was examined through the use of hierarchical general linear modeling. Students identified as African American/ Black or White were included in this analysis with White students serving as the reference category. The first model analyzed was the null model which explained variations in the suspension rates that occurred in the absence of level one or level two factors. The second analysis included race as a predictor variable and examined the odds of suspension and variance explained for the individual level variable of race. The third analysis included adding the level two school level factors into the model to examine the odds of suspension and associated percent increase risk of suspension from the identified school level variables. It is important to note that prior to data analysis, data was reviewed for all level one variables. Three schools were eliminated from this analysis because they had a frequency of zero for Black or White students in the school. Another 102 schools were eliminated due to missing enrollment data for Black or White students in the school. The Maryland State Department of Education (2013) indicated that data is not reported when a given category of students make up less than 5 percent of a school. This left a total of 334 schools in the analysis for race (middle schools n=168; high schools n= 156; combined middle / high schools n=10).

Suspension by Gender

Data for gender was examined through the use of hierarchical general linear modeling. Data for male and female students was analyzed with female students serving

as the reference category. The first model analyzed the null model which explained variations in suspension rates that occurred in the absence of level one or level two factors. The second analysis included gender as a predictor variable and examined the odds of suspension and variance explained for the individual level variable of gender. The third analysis included adding the level two school level factors into the model to examine the odds of suspension and associated increased risk of suspension from the identified school level variables. It is important to note that prior to data analysis, data was reviewed for all level one variables. Two schools were excluded from analysis because they had a frequency of zero male or female students in the school. This left a total of 437 schools in the analysis for gender (middle schools n=218; high schools n=199; combined middle / high schools n=20).

Suspension by Disability Status

Data for disability status was examined through the use of hierarchical general linear modeling. Data for students with disabilities and students without disabilities was analyzed with students without disabilities serving as the reference category. The first model analyzed the null model which explained variations in suspension rates that occurred in the absence of level one or level two factors. The second analysis included disability status as a predictor variable and examined the odds of suspension and variance explained for the individual level variable of disability status. The third analysis included adding the level two school level factors into the model to examine the odds of suspension and associated increased risk of suspension from the identified school level variables. It is important to note that prior to data analysis, data was reviewed for all level one variables. Thirty-two schools were eliminated due to missing enrollment data for

students with or without disabilities in the school. The Maryland State Department of Education (2013) indicated that data is not reported when a given category of students make up less than 5 percent of a school. This left a total of 407 schools in the analysis for disability status (middle schools n=210; high schools n= 182; combined middle / high schools n=16).

Results

Three separate hierarchical generalized linear models were utilized to determine the degree to which individual and school level factors explained the amount of variance in suspension rates for students by race, by gender, and by disability status. In the analyses, suspension was the number of students suspended. This was weighted by the frequency of individuals in a given category. For example, in the analysis of race, the total number of Black or African American students and the total number of White students suspended was included along with the total number of students identifying as each race within each middle and high school in Maryland. The data had a poisson distribution, as is typical of count data. The appropriate distribution was selected in the HLM software.

Race

Table 27 displays the descriptive statistics for the model examining race. The following models were used to predict the level of variance at each level of the model. The equation for level one was E(Y|B) = L V(Y|B) = L. According to this model, Y was the number of suspensions in the racial group for each school, and L was the population size of that racial group in the school. Because the data at this level represent a poison distribution, the equation must be transformed into a log function which produces the following equation: log[L] = B0 + B1*(RACE_REC).

Table 27: Descriptive statistics for race for HGLM analyses.

Level 1 Descriptive Statistics					
Variable	N	Mean	SD	Minimum	Maximum
Race	668	.50	.50	.00	1.00
Frequency	668	397.57	359.45	10.00	2067.00
Suspensions	668	55.88	72.59	1.00	545.00
Level 2 Descriptive Statistics					
Variable	N	Mean	SD	Minimum	Maximum
Enrollment	334	1028.70	504.48	67.00	2806.00
Attendance	334	93.58	3.10	74.60	95.00
Mobility	334	15.25	12.46	5.00	95.00
HQ Teachers	334	26.59	10.27	4.70	63.20
FARMS	334	36.95	21.24	5.00	91.40
Percent Special Education	334	10.77	4.29	5.00	40.50
Title One Status	334	.01	.11	.00	1.00
Student-Teacher Ratio	334	19.13	4.31	4.53	76.33
Math Basic	334	21.02	18.42	.00	132.60
ELA Basic	334	15.75	12.77	.00	96.20
Percent White	334	.49	.28	.01	.94

The level two model was created by using the level one intercept, B0 and the slope, B1. This produced the following equation: B0 = G00 + G01*(ENROLLME) + G02*(ATTENDAN) + G03*(MOBILITY) + G04*(TEACHERP) + G05*(FARMSPER) + G06*(SPECIALE) + G07*(TITLE) + G08*(STUDENTT) + G09*(MATHBASI) + G010*(ELABASIC) + G011*(PERCENTW) + U0 B1 = G10.

The variance for three separate analyses was examined. The first was the null model which accounted for the variance in suspensions between schools without any of the level one or level two factors. The second analysis examined the level of variance for the level one factor (race) without any school level factors. The final analysis examined the level of variance when the level two factors were included in the model. Table 28 displays the coefficients, standards errors, and expected coefficients of the population specific model.

Table 28: Suspension in Maryland with race as a level-1 predictor.

	Population-Average Model		
Fixed Effect	Coefficient	Se	exp(coeff)
Level 1 Variables			
Intercept, *B* 0	4.204***	.041	66.965
Race	.644***	.058	1.904
Level 2 Variables			
Enrollment	.001***	.000	1.001
Attendance	.025	.023	1.025
Mobility	.029**	.008	1.030
NHQ Teachers	.010*	.004	1.010
FARMS	.014**	.004	1.014
Percent Special Education	-.032*	.015	.969
Title One Status	-.705***	.173	.494
Student-Teacher Ratio	.043*	.019	1.044
Math Basic	-.001	.005	.999
ELA Basic	.027**	.008	1.027
Percent White	1.100***	.238	3.004

Note. *p<.05. ** p<.01. *** p<.001.

Level 1 Variable

Table 28 shows a strong association between race and suspension. The exp(coeff) model shows that in the population average model, students who are Black or African American have a 1.904 times the odds of suspension compared to their White counterparts.

Level 2 Variables

An analysis of level two variables revealed multiple variables that correlated with suspension rates. These include: enrollment, mobility, the percent of not highly qualified teachers, Title One funds, the student to teacher ratio, English Language Arts exam scores, and the percent of White students in the school. A one standard deviation (504.48 students) increase in the enrollment of a school district increased the risk of suspension by exp{(504.48) * (.000761)} = 1.4680 or 46.80%. A one standard deviation (12.46%)

increase in mobility increased the risk of suspension by exp{(12.46) * (.029086)}= 1.4368 or 43.68%. A one standard deviation (10.27%) increase in the percent of teachers who are not highly qualified increased the risk of suspension by exp{(1.027)* (.009749)} = 1.1053 or 10.53%. A one standard deviation (21.24%) increase in the percent of students receiving free and reduced priced meals increased the risk of suspension by exp{(21.24) * (.013845)} = 1.3419 or 34.19%. A one standard deviation (4.29%) increase in the percent of students receiving special education services decreased the risk of suspension by exp{(4.29) * (-.031806)} = -.08725 or -12.75%. A one standard deviation (0.11%) increase in receiving Title One funds decreased the risk of suspension by exp{(.11) * (-.70549)} = -.9253 or -7.47%. A one standard deviation increase (4.31 students) in the student to teacher ratio increased the risk of suspension by exp{(4.31) * (.042752)} = 1.2023 or 20.23%. A one standard deviation (12.77%) increase in the percent of students who scored at the basic level of the English Language Arts state assessment increased the risk of suspension by exp{(12.77)* (.026524)}= 1.4031 or 40.31%. A one standard deviation (.28%) increase in the percent of White students in the building increased the risk of Black student suspension by exp{(.28)* (1.099787)}= 1.3606 or 36.06%.

Variance Explained

Table 29 displays the total amount of variance explained at each level of this model. Table 29 shows that the level one model explained 13.8% of the variance, but the full model explained 46.1% of the variance.

Table 29: Variance for null, level one, and full model for race.

	(a)	(b)	(c)
Variance Component	1.04305	.89871	.56186
Variance Explained		.138	.461

Note. (a) Null model, (b) Level One model, (c) Full Model

Gender

Table 30 displays the descriptive statistics for the model examining gender. The following models were used to predict the level of variance at each level of the model. The equation for level one was E(Y|B) = LV(Y|B) = L. According to this model, Y was the number of suspensions in the gender group for each school, and L was the population size of that gender group in the school. Because the data at this level represent a poison distribution, the equation must be transformed into a log function which produced the following equation: log[L] = B0 + B1*(GENDER_R).

Table 30: Descriptive statistics for gender for HGLM analyses.

Level 1 Descriptive Statistics

Variable	N	Mean	SD	Minimum	Maximum
Gender	874	.50	.50	.00	1.00
Frequency	874	467.18	256.21	2.00	1465.00
Suspensions	874	60.20	63.41	.00	404.00

Level 2 Descriptive Statistics

Variable	N	Mean	SD	Minimum	Maximum
Enrollment	437	934.26	507.91	25.00	2806.00
Attendance	437	92.93	5.02	42.70	95.00
Mobility	437	17.86	16.32	5.00	95.00
NHQ Teachers	437	26.01	10.31	2.60	63.20
FARMS	437	41.85	24.10	5.00	95.00
Percent Special Education	437	12.75	13.88	5.00	241.00
Title One Status	437	.04	.19	.00	1.00
Student-Teacher Ratio	437	18.65	4.55	1.60	76.33
Math Basic	437	25.25	23.68	.00	159.80
ELA Basic	437	19.17	18.20	.00	150.40
Percent White	437	.44	.32	.00	.98

The level two model was created by using the level one intercept, B0 and the slope, B1. This produced the following equation: B0 = G00 + G01*(ENROLLME) + G02*(ATTENDAN) + G03*(MOBILITY) + G04*(TEACHERP) + G05*(FARMSPER) + G06*(SPECIALE) + G07*(TITLE) + G08*(STUDENTT) + G09*(MATHBASI) + G010*(ELABASIC) + G011*(PERCENTW) + U0 B1 = G10.

The variance for three separate analyses was examined. The first was the null which accounted for the variance in suspensions between schools without any of the level one or level two factors. The second analysis examined the level of variance for the level one factor (gender) without any school level factors. The final analysis examined the level of variance when the level two factors were included in the model. Table 31 displays the coefficients, standards errors, and expected coefficients of the population specific model.

Table 31: Suspension in Maryland with gender as a level-1 predictor.

	Population-Average Model		
Fixed Effect	Coefficient	Se	exp(coeff)
Level 1 Variables			
Intercept, *B* 0	3.908***	.037	49.805
Gender	.769***	.023	2.158
Level 2 Variables			
Enrollment	.001***	.000	1.001
Attendance	.051**	.015	1.052
Mobility	.028***	.007	1.029
NHQ Teachers	.017***	.003	1.017
FARMS	.021***	.003	1.021
Percent Special Education	-.005	.006	1.000
Title One Status	-1.135***	.208	0.322
Student-Teacher Ratio	.032*	.013	1.033
Math Basic	.000	.004	1.000
ELA Basic	.006	.005	1.006
Percent White	.619***	.154	1.858

Note. *p<.05. ** p<.01. *** p<.001.

Level 1 Variable

Table 31 shows an association between gender and suspension. The exp(coeff) model shows that in the population average model, male students have a 2.158 times the odds of suspension compared to their female counterparts.

Level 2 Variables

An analysis of level two variables revealed multiple variables that correlated with suspension rates in the gender model. These include: enrollment, attendance, mobility, the percent of not highly qualified teachers, the percent of students receiving free and reduced priced meals, Title One funds, the student to teacher ratio, and the percent of White students in the school. A one standard deviation (507.91 students) increase in the enrollment of a school district increased the risk of suspension by exp{(507.91) * (.00086)} = 1.5478 or 54.78%. A one standard deviation (5.02%) increase in the attendance rate increased the risk of suspension by {(5.02) * (.050917)}= 1.2912 or 29.12%. A one standard deviation (16.32%) increase in the mobility rate increased the risk of suspension by exp{(16.32) * (.028262)}= 1.5860 or 58.60%. A one standard deviation (10.31%) increase in the percent of teachers who are not highly qualified increased the risk of suspension by exp{(10.31)* (.016899)} = 1.1903 or 19.03%. A one standard deviation (24.10%) increase in the percent of students receiving free and reduced priced meals increased the risk of suspension by exp{(24.10) * (.021023)} = 1.6597 or 65.97%. A one standard deviation (.19%) increase in the likelihood of receiving Title One funds decreased the risk of suspension by exp{(.19) * (-1.13454)} = -.8061 or -19.39%. A one standard deviation increase (4.55 students) in the student to teacher ratio increased the risk of suspension by exp{(4.55) * (.032081)} = 1.1572 or

15.72%. A one standard deviation (32%) increase in the percent of White students in the building increased the risk of Black student suspension by exp{(.32)* (.61942)}= 1.2192 or 21.92%.

Variance Explained

Table 32 displays the total amount of variance explained at each level of this model. Table 32 shows that the level one model explained 0% of the variance, but the full model explained 46.8% of the variance.

Table 32: Variance for null, level one, and full model for gender.

	(a)	(b)	(c)
Variance Component	.91351	.91484	.48631
Variance Explained		-.001	.468

Note. (a) Null model, (b) Level One model, (c) Full Model

Disability Status

Table 33 displays the descriptive statistics for the level one and level two variables in the model examining disability status. The following models were used to predict the level of variance at each level of the model. The equation for level one was E(Y|B) = LV(Y|B) = L. According to this model, Y was the number of suspensions in the disability status group for each school, and L was the population size of that group in the school. Because the data at this level represent a poison distribution, the equation must be transformed into a log function which produced the following equation: log[L] = B0 + B1*(V11_A).

Table 33: Descriptive statistics for disability status for HGLM analyses.

Level 1 Descriptive Statistics					
Variable	N	Mean	SD	Minimum	Maximum
Special Ed.	814	.5	.5	.00	1.00
Frequency	814	471.17	495.08	8.00	2611.00
Suspensions	814	63.27	73.78	1.00	517.00
Level 2 Descriptive Statistics					
Variable	N	Mean	SD	Minimum	Maximum
Enrollment	407	942.34	503.37	25.00	2806.00
Attendance	407	92.90	5.03	42.70	95.00
Mobility	407	18.14	15.78	5.00	95.00
NHQ Teachers	407	26.39	10.30	2.60	63.20
FARMS	407	42.46	23.95	5.00	95.00
Percent Special Education	407	11.88	4.82	5.10	31.50
Title One Status	407	0.04	.20	.00	1.00
Student-Teacher Ratio	407	18.79	4.46	1.60	76.33
Math Basic	407	26.33	23.72	.00	159.80
ELA Basic	407	19.51	17.11	.00	117.80
Percent White	407	.44	.32	.00	.98

The full model was created by using the level one intercept, B0 and the slope, B1. This produced the following equation: B0 = G00 + G01*(ENROLLME) + G02*(ATTENDAN) + G03*(MOBILITY) + G04*(TEACHERP) + G05*(FARMSPER) + G06*(SPECIALE) + G07*(TITLE) + G08*(STUDENTT) + G09*(MATHBASI) + G010*(ELABASIC) + G011*(PERCENTW) + U0 B1 = G10.

The variance for three separate analyses was examined. The first was the null model which accounted for the variance in suspensions between schools without any of the level one or level two factors. The second analysis examined the level of variance for the level one factor (disability status) without any school level factors. The final analysis examined the level of variance when the level two factors were included in the model. Table 34 displays the coefficients, standards errors, and expected coefficients of the population specific model.

Table 34: Suspension in Maryland with disability status as a level-1 predictor.

	Population-Average Model		
Fixed Effect	Coefficient	Se	exp(coeff)
Level 1 Variables			
Intercept, *B* 0	3.872***	.038	48.028
Disability Status	1.081***	.029	2.949
Level 2 Variables			
Enrollment	.001***	.000	1.001
Attendance	.055***	.012	1.056
Mobility	.031***	.007	1.031
NHQ Teachers	.016***	.003	1.016
FARMS	.024***	.003	1.025
Percent Special Education	-.058***	.014	.944
Title One Status	-.984***	.259	.374
Student-Teacher Ratio	.024*	.012	1.024
Math Basic	-.005	.004	.995
ELA Basic	.014*	.006	1.014
Percent White	.475**	.166	1.608

Note. *p<.05. ** p<.01. *** p<.001.

Level 1 Variable

Table 34 shows an association between disability status and suspension. The exp(coeff) model shows that in the population average model, students with disabilities have a 2.949 times the odds of suspension compared to students without disabilities.

Level 2 Variables

An analysis of level two variables revealed multiple variables that correlated with suspension rates in the disability status model. These include: enrollment, attendance, mobility, the percent of not highly qualified teachers, the percent of students receiving free and reduced priced meals, special education status, Title One funds, the student to teacher ratio, ELA standardized test scores, and the percent of White students in the school. A one standard deviation (503.37 students) increase in the enrollment of a school district increased the risk of suspension by exp{(503.37) * (.000807)} = 1.5011 or 50.11%. A one standard deviation (5.03%) increase in the attendance rate increased the

risk of suspension by {(5.03) * (.054955)}= 1.3184 or 31.84%. A one standard deviation (15.78%) increase in mobility increased the risk of suspension by exp{(15.78) * (.03079)}= 1.6256 or 62.56%. A one standard deviation (10.30%) increase in the percent of teachers who are not highly qualified increased the risk of suspension by exp{(10.30)* (.01577)} = 1.1764 or 17.64%. A one standard deviation (23.95%) increase in the percent of students receiving free and reduced priced meals increased the risk of suspension by exp{(23.95) * (..024333)} = 1.7910 or 79.10%. A one standard deviation (4.82%) increase in the percent of students receiving special education services decreased the risk of suspension by exp{(4.82) * (-.057765)} = -.7570 or -24.30%. A one standard deviation (20%) increase in percent receiving Title One funds decreased the risk of suspension by exp{(.20) * (-.984143)} = -.8213 or -17.87%. A one standard deviation increase (4.46 students) in the student to teacher ratio increased the risk of suspension by exp{(4.46) * (.023947)} = 1.1127 or 11.27%. A one standard deviation (17.11%) increase in the percent of students scoring at the basic level of the ELA exam increased the risk of suspension by exp{(17.11)* (.013883)} = 1.2681 or 26.81%. A one standard deviation (32%) increase in the percent of White students in the building increased the risk of Black student suspension by exp{(.32)* (..474818)}= 1.1641 or 16.41%.

Variance Explained

Table 35 shows the total amount of variance explained at each level of this model. Table 35 shows that the level one model explained 0% of the variance, but the full model explained 49.7% of the variance.

Table 35: Variance for null, level one, and full model for disability status.

	(a)	(b)	(c)
Variance Component	.93505	.93562	.47017
Variance Explained		-.001	.497

Note. (a) Null model, (b) Level One model, (c) Full Model

Discussion

I found that African American students were more likely to be suspended than White students consistent with existing research (Achilles et al., 2007; Krezmien et al., 2006; Petras et al., 2011; Zhang et al., 2004). I found that male students were significantly more likely to be suspended than female students, consistent with existing research (Achilles et al., 2007; Gage et al., 2012; McFadden et al, 1992; Petras et al., 2011; Sullivan et al., 2013; & Wright et al., 2014). I also found that students with disabilities were significantly more likely to be suspended than their peers without disabilities, consistent with previous research (Goran & Gage, 2011; Mendez, 2003; Krezmien et al., 2006; Sullivan et al., 2013; Vincent et al., 2012). These findings are important because they demonstrate that these findings hold true within a multi-level model that accounts for both individual and school level factors.

This study was unique because it is the first study that has examined the impact of individual and school level factors associated with suspension by race, by gender, and by disability status. For race, gender, and disability, I found that the full multilevel model accounted for very high percentages of the explained variance, substantially higher than the variance explained by the individual level models. Consequently, most of the variability seen in suspension rates between the groups in the study was controlled for and accounted for by school level and individuals factors in a combined model.

An examination of the level two factors revealed commonalities between the three different models. Across all three models I found that an increase in the number of students enrolled in the school increased the odds of suspension for Black students, male students, and students with disabilities. An increase in the percent of students who started school in one school district and moved to another at some point during the school year increased the risk of suspension for Black students, male students, and students with disabilities. This is consistent with previous research that has stated that mobility increases the probability of student suspension (Mendez et al., 2002). The percent of teachers who were not highly qualified working in schools increased the risk of suspension for Black students, male students, and students with disabilities. This is consistent with previous findings that demonstrated that having high quality teachers has been associated with lower suspension rates (Losen et al., 2003). An increase in the percent of students receiving free and reduced priced meals increased the risk of suspension for Black students, male students, and students with disabilities. An increase in the student to teacher ratio increased the risk of suspension for Black students male students, and students with disabilities. An increase in the percent of White students in the school increased the odds of suspension for Black students, male students, and students with disabilities. An increase in the school receiving Title One funds decreased the odds of suspension for Black students, male students, and students with disabilities. In the models that used race and disability status as the level one predictor, an increase in the percent of students receiving special education services and in the percent of students scoring at the basic level (lowest level) on state English Language Arts exams increased the risk of suspension for Black students and students with disabilities. Losen and

colleagues (2003) reported that schools with higher achievement on fourth and eighth grade exams had lower suspension and expulsion rates compared to schools with lower scores on these exams. These findings are important because they highlight the fact that school level factors also contribute to disproportionate suspension rates and that these school level factors hold true within a multilevel model. Further, these findings are unique and highlight the combined effects of individual and school level factors and how they interact to produce these findings.

In this study an increase in the average daily attendance rate increased the risk of suspension for male students and students with disabilities. This finding is contradictory to previous findings that schools with a higher average daily attendance rate had lower suspension rates (Bruns et al., 2005).

These finding expands on the research currently presented by authors of other research studies that have examined individual and school level factors using a multilevel analysis. Previously authors (Skiba et al., 2014) have indicated that Black students, male students, and students receiving free and reduced lunch were more likely to receive out of school suspension. They also reported that the percent of Black students in the school and the principal's belief in alternatives to suspension and expulsion were the only school level factors associated with an increased risk of suspension for Black students. Petras and colleagues (2011) indicated that the level of aggression displayed by male students was a predictor for an increased risk of suspension. Sullivan and colleagues (2014) reported that the only predictor of suspension for students with emotional disabilities was the rate of non-drug and weapon related disciplinary infractions in the school. This study expands on those findings by acknowledging that the individual level factors do influence

suspension rates; however, when school level factors were added into the model, a greater proportion of the variability was accounted for.

Given these findings additional research is warranted in order to better understand the issue of disproportionate suspension rates. First, there are few studies that have examined school level factors that influence suspension rates using a hierarchical general linear modeling approach. Additional research and studies to replicate these findings is warranted. It may also be important to determine what, if any, other school level factors are important that could account for a greater amount of the variance in this model. If school districts have a clear understanding of the school level factors most likely to influence disproportionate suspension rates changes can be made to the ways that schools operate. However, it is critical to understand exactly which factors are most likely to play a role in this issue.

Additionally, while a great deal of research has been conducted on individual level factors and school level factors, much of the research in this area has been done using existing databases. It will be important for future studies to examine the school level factors as they are naturally occurring within the school setting. Researchers may wish to consider specific, targeted interventions with the school level factors associated with an increased risk of suspension in order to determine if making improvements in these areas can reduce the risk of suspension for students more likely to be at risk for suspension.

Limitations

There are multiple limitations to this study. The data available from the Maryland Department of Education does not allow for data to be analyzed across multiple

individual level factors at the school level. Individual data is available by race, by gender, or by disability status; however, none of the data allow for an analysis of two or more of these factors together. For example, it is not possible to study Black, male students with disabilities. Officials in Maryland and other states should review state data reporting procedures and report disaggregated student level data.

Further, within the race data set, the data did not allow for any analysis beyond that of Black or African American students and White students. Even within these two groups, there was a large amount of missing enrollment data within these variables that led to the exclusion of many schools from the final data analysis. Data was missing from the special education status analysis and in the gender analysis, to a lesser degree. Many states do not report data for certain variables when the percent of students in a category is too low and could lead to the potential identification of individual students. This happened in Maryland with this data set (Maryland State Department of Education, 2013).

The data in this sample were also count data. Count data do not allow for researchers to examine multiple suspensions and the risks for students who receive multiple suspensions. Because of this, multiple suspensions are distributed across the groups presented in this study.

Conclusion

Years of research on disproportionate suspension rates based on the individual level factors of race, gender, and disability status has demonstrated that students who are Black (Achilles et al., 2007; Krezmien et al., 2006; Petras et al., 2011; Zhang et al., 2004), who are male (Achilles et al., 2007; Gage et al., 2012; McFadden et al, 1992;

Petras et al., 2011; Sullivan et al., 2013; & Wright et al., 2014), and who have a disability (Goran & Gage, 2011; Mendez, 2003; Krezmien et al., 2006; Sullivan et al., 2013; Vincent et al., 2012) are more likely to be suspended from school compared to students who are White, who are female, and who do not have a disability. While understanding these individual level factors is important, continuing to report on individual level factors, in the absence of school level factors, insinuates that the issue of school suspension is an individual problem rather than a school problem. Reporting on individual level factors focuses only on those individual characteristics that are beyond the control of the school district. School districts do not have the ability to change one's race, gender, or disability status. However, they do have the ability to change school level practices. Rather than continuing to focus on individual level factors that cannot be changed, researchers in the field need to start focusing on how individual factors and school level factors interact and how changes to school districts practices work to reduce the disproportionately seen in school suspension rates. It is only when we accept that fact that this is a school level problem that we can begin to address the issue of the disproportionate suspension rates seen within various groups of marginalized students.

References

Achilles, G. M., McLaughlin, M. J., & Croninger, R. G. (2007). Sociocultural correlates of disciplinary exclusion among students with emotional, behavioral, and learning disabilities in the SEELS national dataset. *Journal of Emotional and Behavioral Disorders, 15*(1), 33-45.

Anfinson, A., Autumn, S., Lehr, C., Riestenberg, N., & Scullin, S. (2010). Disproportionate minority representation in suspension and expulsion in Minnesota public schools: A report from the Minnesota department of education. *International Journal on School Disaffection, 7*(2), 5-20.

Arcia, E. (2007a). A comparison of Elementary/K-8 and middle schools' suspension rates. *Urban Education, 42*, 456-469. doi: 10.1177/0042085907304879

Arcia, E. (2007b). Variability in schools' suspension rates of black students. *Journal of Negro Education, 76*(4), 597-609.

Bruns, E. J., Moore, E., Stephan, S. H., Pruitt, D., & Xinst, M. D. (2005). The impact of school mental health services on out-of-school suspension rates. *Journal of Youth & Adolescence, 34*(1), 23-30. doi:10.1007/s10964-005-1333-z

Butler, B. R., Lewis, C. W., Moore, J. L. I.,II, & Scott, M. E. (2012). Assessing the odds: Disproportional discipline practices and implications for educational stakeholders. *Journal of Negro Education, 81*(1), 11-24.

Christle, C., Nelson, C. M., & Jolivette, K. (2004). School characteristics related to the use of suspension. *Education & Treatment of Children, 27*(4), 509-526.

Cooley, S. (1995). *Suspension/expulsion of regular and special education students in Kansas: A report to the Kansas state board of education.* Topeka: Kansas State Board of Education.

Eitle, T. M., & Eitle, D. J. (2004). Inequality, segregation, and the overrepresentation of African Americans in school suspensions. *Sociological Perspectives, 47*(3), 269-287.

Fasko, D., Grubb, D. J., & Osborne, J. S. (1995). An analysis of disciplinary suspensions. *MidSouth Educational Research Association,* Biloxi, MS.

Gage, N. A., Josephs, N. L., & Lunde, K. (2012). Girls with emotional disturbance and a history of arrest: Characteristics and school-based predictors of arrest. *Education and Treatment of Children, 35*(4), 603-622.

Garson, G.D. (2013). *Hierarchical Linear Modeling: Guide and Applications.* Thousand Oaks: Sage.

Goran, L. G., & Gage, N. A. (2011). A comparative analysis of language, suspension, and academic performance of students with emotional disturbance and students with learning disabilities. *Education & Treatment of Children, 34*(4), 469-488.

Hemphill, S. A., Plenty, S. M., Herrenkohl, T. I., Toumbourou, J. W., & Catalano, R. F. (2014). Student and school factors associated with school suspension: A multilevel analysis of students in Victoria, Australia and Washington State, United States. *Children & Youth Services Review, 36*, 187-194. doi:10.1016/j.childyouth.2013.11.022

Hoffman, S. (2014). Zero benefit: Estimating the effect of zero tolerance discipline polices on racial disparities in school discipline. *Educational Policy, 28*(1), 69-95. doi:10.1177/0895904812453999

Krezmien, M. P., Leone, P. E., & Achilles, G. M. (2006). Suspension, race, and disability: Analysis of statewide practices and reporting. *Journal of Emotional & Behavioral Disorders, 14*(4), 217-226.

Losen, D.J. & Gillespie, J. (2012). Opportunities suspended: The disparate impact of disciplinary exclusion from school. The Civil Rights Project. Retrieved from: http://civilrightsproject.ucla.edu/resources/projects/center-for-civil-rights remedies/school-to-prison-folder/federal-reports/upcoming-ccrr-research/losen gillespie-opportunity-suspended-2012.pdf.

Losen, D. J., Simmons, A. B., Staudinger-Poloni, L., Rausch, M. K., & Skiba, R. (2003). *Exploring the link between low teacher quality and disciplinary exclusion*. Boston, MA: Harvard University Civil Right Project and Northeastern University Institute on Race and Justice.

Maryland State Department of Education. (2015). Maryland Report Card. Retrieved from: http://reportcard.msde.maryland.gov/.

Maryland State Department of Education. (2013). Maryland Public Schools Suspensions by School and Major Offense Category Out of School Suspensions and Expulsions 2012-2013. Retrieved from: http://marylandpublicschools.org/MSDE/divisions/planningresultstest/doc/20122013Stud ent/susp13schout.pdf.

McFadden, A. C., Marsh, G. E., Price, B. J., & Hwang, Y. (1992). A study of race and gender bias in the punishment of handicapped school children. *Urban Review, 24*, 239-251.

Mendez, L. M., & Knoff, H. M. (2003). Who gets suspended and why: A demographic analysis of schools and disciplinary infractions in a large school district. *Education and Treatment of Children, 26*(1), 30-51.

Mendez, L. M., Knoff, H. M., & Ferron, J. M. (2002). School demographic variables and out of school suspension. *Psychology in the Schools, 39*(3), 259-277. doi: 10.1002/pits.10020

Mendez, L. M. R. (2003). Predictors of suspension and negative school outcomes: A longitudinal investigation. *New Directions for Youth Development, 2003*(99), 17 33. doi: 10.1002/yd.52

Petras, H., Masyn, K. E., Buckley, J. A., Ialongo, N. S., & Kellam, S. (2011). Who is most at risk for school removal? A multilevel discrete-time survival analysis of individual- and context-level influences. *Journal of Educational Psychology, 103*(1), 223-237. doi: 10.1037/a0021545

Raudenbush, S.W., Bryk, A.S., & Congdon, R. (2004). HLM6 for Windows. [Computer Software] Skokie, IL: Scientific Software International Inc.

Skiba, R.J., Chung, C.G., Thachok, M., Baker, T.L., Sheya, A. & Hughes, R.L. (2014). Parsing disciplinary disproportionality: Contributions of infraction, student, and school characteristics to out-of-school suspension and expulsion. *American Educational Research Journal, 51(4),* 640-670. doi: 10.3102/0002831214541670

Sullivan, A. L., Klingbeil, D. A., & Van Norman, E. R. (2013). Beyond behavior: Multilevel analysis of the influence of sociodemographics and school characteristics on students' risk of suspension. *School Psychology Review, 42*(1), 99-114.

Sullivan, A.L., Van Norman, E.R., & Klingbeil, D.A. (2014). Exclusionary discipline of students with disabilities: Student and school characteristics predicting suspension. *Remedial & Special Education, 35(4),* 199-210. doi: 10.1177/0741932513519825

Vincent, C. G., Sprague, J. R., & Tobin, T. J. (2012). Exclusionary discipline practices across students' Racial/Ethnic backgrounds and disability status: Findings from the pacific northwest. *Education and Treatment of Children, 35*(4), 585-601.

Wallace, J. M., Jr., Goodkind, S., Wallace, C. M., & Bachman, J. G. (2008). Racial, ethnic, and gender differences in school discipline among U.S. high school students: 1991-2005. *Negro Educational Review, 59*(1-2), 47-62.

Welch, K., & Payne, A. A. (2012). Exclusionary school punishment: The effect of racial threat on expulsion and suspension. *Youth Violence and Juvenile Justice, 10*(2), 155-171. doi: 0.1177/1541204011423766

Wright, J. P., Morgan, M. A., Coyne, M. A., Beaver, K. M., & Barnes, J. C. (2014). Prior problem behavior accounts for the racial gap in school suspensions. *Journal of Criminal Justice, 42*(3), 257-266. doi:10.1016/j.jcrimjus.2014.01.001

Zhang, D., Katsiyannis, A., & Herbst, M. (2004). Disciplinary exclusions in special education: A 4-year analysis. *Behavioral Disorders, 29*, 337-347.

CHAPTER IV

STUDY TWO: EXAMINING SCHOOL DISCIPLINE POLICIES AND OUT OF SCHOOL SUSPENSION

Abstract

This study examined the odds of suspension for students in Maryland (n=829,581) during the 2012-2013 school year and school policy. Results from this study indicated that students who were Black or African American and who had a disability were more likely to be suspended from school compared to students who were White and who did not have a disability. Policy factors indicated that the majority of school districts continue to utilize negative, rather than proactive, consequences for addressing student failure to comply with school behavioral expectations. This data will be presented alongside odds ratios for race and for disability status. Implications will be discussed.

Introduction

The Gun Free Schools Act (1994) mandated that all states receiving federal funding expel students from public schools for no less than a year for bringing weapons to school. The goal of this policy was to show zero tolerance for acts of violence in public schools and to keep schools safe. The theory was that if school policies were strict enough with respect to the punishments given to students for failure to follow school discipline codes students would stop bringing weapons to school. One unanticipated and problematic consequence of the implementation of this law was the expansion of zero tolerance policies for minor infractions of school rules including truancy, skipping class, and disrupting a class period (Monahan, VanDerhei, Bechtold, & Cauffman, 2014). These automatic consequences were intended to be the same for all students and were

applied without consideration of the context or mitigating factors associated with a behavioral infraction (U.S. Department of Education, 2014).

There is a large body of research that found that suspensions were predicted by race (Kinsler, 2011; Krezmien, Leone, & Achilles, 2006; Petras, Masyn, Buckley, Ialongo, & Kellam, 2011; Rouse, Fantuzzo, & LeBoeuf, 2011; Wright, Morgan, Coyne, Beaver, & Barnes, 2014) and disability status (Goran & Gage, 2011; Krezmien et al., 2006; Skiba, Peterson, & Williams, 1997; Sullivan, Klingbeil, & Van Norman, 2013; Vincent, Sprague, & Tobin, 2012). African American students were disproportionately suspended compared to White students (Krezmien et al., 2006; Mattison & Aber, 2007; Mendez & Knoff, 2003; Noltemeyer & McLoughlin, 2010; Shirley & Cornell, 2011). Rates for Hispanic students have varied across studies. Some authors (Afinson, Autumn, Lehr, Riestenberg, & Scullin, 2010; Zhang, Katsiyannis, & Herbst, 2004) reported that Hispanic students were over represented in suspension rates while others (Cooley, 1995; Krezmien et al., 2006) reported that Hispanic students were suspended at rates similar to White students. White students were consistently at the lowest risk for being suspended among White, African American, and Hispanic students. Students with disabilities were suspended more frequently than their peers without disabilities (Goran & Gage, 2011; Krezmien et al., 2006; Mendez, 2003; Skiba et al., 1997; Vincent et al., 2012). Students with emotional and behavioral disorders were identified as those students most commonly suspended from school compared to students from other disability categories (Krezmien et al., 2006; Wagner, Kutash, Duchnowski, Epstein, & Sumi, 2005).

Despite numerous studies examining suspension outcomes at multiple levels and using multiple quantitative analytic procedures, I did not find any studies that examined

policy interventions designed specifically to change suspension policies and practices in schools, districts, or states. One of the reasons for the lack of research in this area is that disciplinary practices in schools are guided by district policies specifically describing the types of disciplinary infractions and the corresponding consequences for the disciplinary infractions. Policies written in this manner still assume that strong discipline policies linked to specific consequences will serve as a deterrent for students wishing to engage in negative behaviors (Skiba, 2014). Data suggests that schools implementing zero tolerance approaches have increased suspension and expulsion rates (Sullivan et al., 2013). However, there is no data to suggest that an increase in the use of out of school suspension or expulsion actually leads to reduced disruption in schools or improved school climate (Skiba, 2014).

In order to develop an accurate understanding of the factors associated with differential disciplinary outcomes, it is necessary to analyze the disciplinary polices that guide the disciplinary practices in schools and districts. Bickmore (2004) completed a qualitative analysis of discipline policies in Canada. She found that school district discipline policies vary substantially. Some have very strict and narrow behavior regulations with nonviolent behaviors receiving harsh treatment and punishment. Other policies were less structured and involved working with educators and students on conflict management.

Pamela Fenning and colleagues (2008b) conducted an analysis of discipline codes of conduct using the *Analysis of Discipline Codes Rating Form- Revised*. Findings from this study suggest that suspension and expulsion were the most common consequences found in school codes of conduct. These consequences were used for all behaviors, mild

to severe. Fenning and colleagues (2008) found that mild behaviors, such as truancy and class disruption, included the use of suspension as a potential consequence in 64% and 67% of handbooks examined respectively. Handbooks describing bullying behavior, considered a moderate infraction of school rules by the authors, had suspension listed as a potential consequence in 47% of the handbooks and expulsion listed as a potential consequence in 45% of the handbooks. Fighting and vandalism had suspension as a consequence in 78% and 88% of the handbooks respectively. Traditional zero tolerance offenses, such as drug and weapons offenses, indicated the uses of suspension or expulsion as a behavioral consequence in 90% of the handbooks reviewed. Proactive responses to student behavior, such as directly teaching behavioral expectations, were found in less than 10% of the codes of conduct. The use of skill building and substance abuse interventions was found in 19% and 36% of handbooks respectively. Findings from this study indicated that reactive responses were greater than proactive responses across all behaviors. When behaviors were divided into groups (mild, moderate, and severe), the use of reactive consequences was significantly greater for mild and severe behaviors. Moderate behaviors often resulted in more proactive than reactive consequences.

Purpose and Research Questions

No study to date has examined the relationship between school discipline policies and school suspension rates in a single study. Since states are currently mandating school districts to revise discipline policies to move away from zero tolerance practices, it is important for researchers to know which policies may lead to lower suspension rates before individuals can advocate for any change in practice. The purpose of this

manuscript is to examine both suspension practices and school disciplinary policies in order to understand the relationship between school policy and student suspension rates. This manuscript presents two discrete but integrated studies. Study 1 addresses the question: *What are the current suspension outcomes in Maryland public schools?* Study 2 addresses two questions: *What types of disciplinary policies do the districts employ?* and *Is there a relationship between disciplinary policies and disciplinary outcomes?*

Method

Data Collection

Data were collected from the Suspensions, Expulsions, and Health Related Exclusions Maryland Public Schools 2012-2013 report (Maryland State Department of Education, 2013b), the Maryland Special Education / Early Intervention Services Census Data and Related Tables October 25, 2013 (Maryland State Department of Education, 2014b), the Maryland Public School Enrollment by Race / Ethnicity and Gender and Number of Schools September 30, 2012 report (Maryland State Department of Education, 2012), and the Maryland Special Education / Early Intervention Services Census and Related Tables October 26, 2012 (Maryland State Department of Education, 2013a). Data were also collected from the student handbook for each district within the state and from each handbook's rating on the *Analysis of Discipline Code Rating Form-Revised* (Fenning, 2008a).

State Reports of Suspension and Expulsion

Data relative to the total, unduplicated number of students who received an out of school suspension for each district by race and by disability status were entered into a Microsoft Excel spreadsheet by copying and pasting the information directly from the

source into the spreadsheet. Data for prekindergarten students were not included in this dataset so prekindergarten students were not included in data analysis. Data from the SEED School District was not included in data collection because the SEED School District is a college-preparatory boarding school that comprises its own district (The SEED School of Maryland, 2016).

A university professor checked the data for accuracy after the initial data import was completed. He examined the data to ensure that the data located in each of the state publications matched the data on the Microsoft Excel spreadsheet. In order to do this, he had an electronic copy of each of the data sources and compared the data on each line of the data sources with the data entered into the spreadsheet. Discrepancies were highlighted in yellow, and the primary investigator and university professor reviewed the data together to determine the correct number that should be found in each cell on the Microsoft Excel spreadsheet by comparing the number found in each state document to the number located in the Microsoft Excel spreadsheet. The agreed upon data were entered accordingly.

State Enrollment Reports

Data on the number of students enrolled in each county on September 30, 2012 were obtained from the Maryland Public School Enrollment by Race / Ethnicity and Gender and Number of Schools September 30, 2012 (Maryland State Department of Education, 2012) report for the total number of students by race. Data on the number of students with disabilities was obtained from the Maryland Special Education / Early Intervention Services Census Data and Related Tables October 26, 2012 (Maryland State Department of Education, 2013a). Data from these sources were hand entered because the

investigator had to subtract preschool students from the totals for each category as preschool students were not included in the suspension data obtained for this study yet they were included in the enrollment numbers. After the data were entered into Microsoft Excel it was checked for accuracy using the process described for the enrollment data. The university professor also subtracted the number of preschool students consistent with the initial procedures. Any discrepancy was highlighted in yellow, and the two investigators reviewed the data together to determine the correct number that should be found in each cell on the spreadsheet by recalculating each number together and determining the correct number that should be in each cell of the Microsoft Excel spreadsheet.

Student Handbooks

Student handbooks from the 2013-2014 school year were obtained from each school district in Maryland. A Google search for each school district in Maryland was performed to locate the district home page for each school district. Some school district's handbooks were available on the district home page while other webpages required a more extensive search to locate this document. A phone call was placed to members of the pupil services office or the superintendent's office at the Board of Education of each school district to verify that the correct handbook was obtained after the handbook was located on the webpage. Each individual at the district's board of education was directed to the location on the website where the handbook was obtained while the name and year of publication was stated. It was confirmed that the handbook retrieved was the one in use by the school district during the 2013-2014 school year.

There were six school districts whose handbooks and codes of conduct could not be located on the website: Caroline, Cecil, Dorchester, Somerset, Talbot, and Worcester County School Districts. A phone call was made to personnel at the pupil services department or the superintendent's office at the Board of Education within each of these districts to inquire about locating the handbook on the website. For each of the six counties, the principal investigator was provided with either a link to the correct handbook and code of conduct or a paper copy was sent in the mail.

Handbook Ratings

After retrieving copies of each handbook, three copies were made of each handbook and put into three separate binders. The *Analysis of Discipline Code Rating Form-Revised* (Fenning, 2008a) was used to rate each school district's handbook by two independent raters. The rating form contained a list of 50 behavioral infractions that students in school could commit along the vertical access of the rating sheet. Along the horizontal access was a list of 31 possible consequences that students could receive for engaging in the behavioral infractions. Each rater was given 24 electronic copies of the rating tool on an electronic drive with the school district name included on each document and a binder containing each handbook. Each reviewer located the first behavior located on the rating form and reviewed the handbook to determine if the behavior was discussed in the handbook, if it was linked to consequences, what those consequences were, if the consequences changed for repeat violations, and if there was any administrator discretion in assigning those consequences. Items present were marked (1) and those not present were marked (0). Each independent rater wrote directly on each handbook where information relative to each offense and the related consequences was found.

Interrater reliability (IRR) statistics were compiled following the rating of all handbooks and was calculated to be at 87.05 which is an acceptable IRR (Horner et al., 2005). When there was a discrepancy, each independent rater identified the page number and the statements from the handbooks that included the information associated with the rating. Two independent reviewers then reviewed each discrepancy to determine the accurate rating. They informed the primary investigator and made the final determination as to whether that item would be included as present (1) or not present (0) in the spreadsheet.

Variables

Study 1

Study 1 includes individual variables examined at the district level. There were two individual level predictors included in data analysis. Race was categorized as White, Black, or Hispanic. Disability status was categorized as Disability or no Disability. Suspension was the criterion variable. Suspension was categorized as suspended or not suspended. Suspension measures whether an individual was or was not suspended but does not measure the number of suspensions or length of suspensions of an individual.

Study 2

Study 2 includes an examination of the findings from Study 1 in the context of district level variables and district policy related variables.

District Enrollment. School district enrollment data was defined as the total number of students enrolled in each school district on September 30, 2012.

School Handbook Data. School handbook data included offenses which were classified as low (class or school disruption and general staff disrespect or

insubordination), medium (bullying or cyberbullying and fighting), and high (drugs and weapons) level offenses. The determination that an offense was considered to be low, moderate, or high was made based on previous research using the *Analysis of Discipline Code Rating Form- Revised* (Fenning, et al., 2008b). I examined the percentage of offenses included in each handbook, the degree to which each offense was linked to one or more consequences, the degree to which different consequences were applied for repeat offenses, and the degree to which an administrator had discretion in assigning consequences.

I also calculated the percentage of positive and negative consequences included for each category of behavioral offense. Positive consequences were consequences that provided support to a student rather than a punitive consequence. The operational definitions for the positive consequences are displayed in Table 36.

Table 36: Definition of positive consequences.

Positive Consequences	Description
Counseling	Face to face individual and group counseling
Discipline Behavior Contract	Contract to address behavioral concerns
Mentoring	Mentorship relationship with student
Parent Conference	Face-to-face meetings with parents
Peer Mediation	Peer to peer problem-solving activity
Prevention	Psycho-educational classes and interventions prior to the behavior happening (universal supports)
Skill Building	Instruction related to topic/behavioral infraction; direct instruction following incident
Student Communication	Includes phone/written and face- to -face meetings
Substance Abuse Intervention	Counseling specifically related to drug/alcohol offenses' group treatment related to substance abuse
Teacher Communication	Teacher communication of any type that includes phone calls, emails, or face-to-face meetings about behavior

Negative consequences were consequences that implemented a punitive consequence to a student. Table 37 displays the operational definition of each negative consequence.

Table 37: Definition of negative consequences.

Negative Consequence	Description
Academic/Behavior/Discipline Probation	Probation related to discipline infraction
Alternative School Placement	Removal from the school setting for discipline reasons into an alternative placement, such as interim alternative educational placement or diagnostic therapeutic environment
Classroom Removal	Classroom removal
Detention	Detention
Discipline Board Hearing/Review	Discipline board hearing/formal review for behavioral infractions
Expulsion	Expulsion
Fines	Monetary fines for infractions
In School Suspension	In School Suspension
Out of School Suspension	Out of school suspension (code if policy mentions suspension or out of school suspension)
Police Involvement	Police intervention (e.g. reporting incident to police, school-based arrest, referral to juvenile court, including mention of referral to truancy officer)
Privilege Loss (e.g. extracurricular, dances)	Loss of privilege/participation in school activity
Saturday Detention	Saturday detention
Work Detention	Detention requiring assigned work

Participants

Participants included enrolled students in the state. There were 829,581 kindergarten through grade twelve students enrolled in Maryland Public Schools on September 30, 2012. The demographics of the participants are displayed in Table 38. There were 24 school districts included. The smallest school district in the state of Maryland was Kent County School District with 2,011 students. The largest school

district in Maryland was Montgomery County School district with 145,001 students. The demographics of the districts varied widely, as shown in Table 38.

Table 38: Enrollment by race, by gender, and by disability status by school district.

	Total (N)	White (N)	Black (N)	Hispanic (N)	Male (N)	Female (N)	Disabilities (N)	No Disabilities (N)
Allegany	8409	7598	292	104	4358	4051	1175	7234
Ann Arundel	75588	46035	15198	7337	38478	37110	6943	68645
Baltimore City	79857	6382	67780	4104	40573	39284	13233	66624
Baltimore County	103269	46296	39705	6653	52675	50594	12458	90811
Calvert	15923	11896	2204	689	8085	7838	1262	14661
Caroline	5220	3604	823	463	2631	2589	524	4696
Carroll	26324	23120	943	1027	13474	12850	2784	23540
Cecil	15007	12107	1261	755	7835	7172	1841	13166
Charles	25733	8442	13501	1423	13328	12405	2216	23517
Dorchester	4448	2297	1616	247	2317	2131	381	4067
Frederick	39389	26440	4221	4566	20260	19129	3891	35498
Garrett	3918	3765	10	45	2046	1872	388	3530
Hartford	37108	25185	6475	2073	19129	17979	4641	32467
Howard	50969	23657	10697	4339	26359	24610	4147	46822
Kent	2011	1301	447	145	1063	948	223	1788
Montgomery	145001	48631	30602	37827	74224	70777	15643	129358
Prince George's	118135	5299	78555	28162	60243	57892	12992	105143
Queen Ann's	7503	6274	519	341	3836	3667	915	6588
St. Mary's	16712	11522	3070	918	8507	8205	1570	15142
Somerset	2729	1228	1121	196	1376	1353	396	2333
Talbot	4277	2869	722	441	2206	2071	345	3932
Washington	21914	16122	2673	1312	11290	10624	2005	19909
Wicomico	13878	6767	4861	937	7132	6746	1576	12302
Worcester	6259	4238	1240	366	3241	3018	767	5492

Design and Data Analysis

Study 1

Descriptive statistics were first analyzed in order to determine the percent of students suspended at the state level and by school district. Individual percentages for race and for disability status were calculated. Binary logistic regression was utilized in order to determine the odds of suspension at the school district level by race and by disability status.

Study 2

Differences in school discipline policies by school district were also examined. Six behaviors considered to be low (class or school disruption and general staff disrespect / insubordination), medium (bullying / cyberbullying and fighting with peers) and high (drugs and weapons) level offenses were reviewed. Each of these behaviors was reviewed to determine whether each behavior was included in the handbook and whether it was linked to specific consequences if it was included. The handbooks were reviewed to determine whether there was any administrator discretion in determining the consequence given for a particular behavior. If more than one choice for a consequence was present for a given behavior administrator discretion was identified as present. Administrator discretion was also indicated when language suggested that a consequence would not be mandatory. Each handbook was examined to determine the total percent of positive and negative consequences included for each behavioral category. This data was considered in the context of odds of suspension and percent of students suspended for Black students, Hispanic students, and students with disabilities.

Results

Study 1

Data indicated that 5.1 percent of students were suspended from the Maryland Public Schools in grades kindergarten through twelfth grade during the 2012-2013 school year. Table 39 displays the total enrollment and percent of students who were suspended during the 2012-2013 school year. The districts suspension rates varied from 2.4% to 11.9%. Three school districts suspended students at a rate that exceed two times that of the state percentage. Two school districts suspended students at a rate that exceeded one and a half times the state percentage. Two school districts suspended students at a rate that was under half of that of the state percentage.

Race

Table 39 displays the enrollment and suspension rate by race for the twenty-four school districts in Maryland. Just over 3% of White students were suspended from Maryland schools during the 2012-2013 school year. Suspension rates for White students ranged from 1% to 8.4 %. Three school districts suspended White students at a percentage that was at least double that of the state percentage. Three school districts suspended at least 1.5 times the percentage of White students compared to the percent of White students suspended at the state level. Seven school districts (Baltimore County, Carroll, Frederick, Howard, Montgomery, Prince George's, and Queen Ann's County School District) suspended White students at a rate that was less than the state percentage of total White students suspended.

More than 9% of Black students were suspended from Maryland schools during the 2012-2013 school year. The suspension rate ranged from 5.57% to 20.33%. Two

school districts suspended Black students at a rate that was greater than two times the rate of the state-wide percent of Black students suspended. Four school districts suspended Black students at 1.5 times the state rate. Seven school districts (Baltimore City, Baltimore County, Howard, Montgomery, Prince George's, Queen Ann's, and Washington) suspended Black students at a rate that was below the state rate.

More than 3% of Hispanic students were suspended from school during the 2012-2013 school year. The suspension rate for Hispanic students ranged from 0% to 8.4%. Two school districts suspended Hispanic students at a rate that was 2 times higher than the state percentage. One school district suspended Hispanic students at a rate that was 1.5 times the state percentage. Two school districts suspended Hispanic students at a rate that was less than half of the state percentage.

Table 39: Enrollment, overall percent suspended, and suspension rate by race.

	Total (N)	% Sus	White (N)	% White	Black (N)	% Black	Hispanic (N)	% Hispanic
State	829581	5.1	351075	3.1	288536	9.1	104470	3.3
Allegany	8409	5.7	7598	5.5	292	13.7	104	1.0
Ann Arundel	75588	5.4	46035	3.6	15198	11.5	7337	4.5
Baltimore City	79857	7.3	6382	3.9	67780	8.1	4104	1.9
Baltimore County	103269	5.3	46296	2.9	39705	9.1	6653	3.6
Calvert	15923	5.2	11896	4.4	2204	10.6	689	3.5
Caroline	5220	5.8	3604	5.2	823	9.4	463	3.7
Carroll	26324	3	23120	2.9	943	8.5	1027	2.0
Cecil	15007	7.7	12107	6.7	1261	17.5	755	7.7
Charles	25733	8.3	8442	4.4	13501	11.8	1423	4.6
Dorchester	4448	10.8	2297	6.2	1616	18.5	247	2.8
Frederick	39389	4	26440	3.0	4221	10.5	4566	4.3
Garrett	3918	3.5	3765	3.5	10.0	40.0	45	0
Hartford	37108	5.8	25185	3.8	6475	13.5	2073	5.9
Howard	50969	2.9	23657	1.5	10697	7.2	4339	3.8
Kent	2011	7.3	1301	5.3	447	15.4	145	4.1
Montgomery	145001	2.4	48631	1.0	30602	5.6	37827	2.6
Prince George's	118135	7	5299	2.9	78555	9.0	28162	3.1
Queen Ann's	7503	2.5	6274	2.0	519	8.1	341	4.1
St. Mary's	2729	5	11522	3.3	3070	12.5	918	3.6
Somerset	16712	11.9	1228	8.4	1121	17.5	196	4.1
Talbot	4277	4.7	2869	3.2	722	11.2	441	3.2
Washington	21914	2.6	16122	1.9	2673	6.3	1312	3.4
Wicomico	13878	11	6767	5.3	4861	20.3	937	8.4
Worcester	6259	3.7	4238	2.3	1240	9.2	366	1.9

Odds of Suspension by Race. Binary logistic regression was used to examine the odds of being suspended by racial category for each of the school districts in Maryland. Suspension was a dichotomous variable that represented whether a student was suspended or not suspended (0 = not suspended; 1= suspended). Race was the predictor, and White was the reference category because the White category was the largest group in the state and the largest group in most of the school districts. Each of the

other racial categories was compared to the reference category. The White group was the reference category, so it does not have an odds ratio. Garrett County School District only had 10 Black students, so it was not included in this analysis. Table 40 displays the odds ratios (with the upper and lower confidence intervals) and the significance test for the Wald statistic for the Black group and the Hispanic group for each school district.

Odds Ratio for Black Students. In every school district, the odds of being suspended for students in the Black group were higher than the odds of being suspended for students in the White group. The odds ratio for the Black group ranged from 1.865 to 5.805. The odds ratio for the Black group was under 2.0 in only one county. The odds ratios for the Black group were above 3.0 in ten school districts and above 4.0 in five school districts. The odds ratio for the Black group was above 5.0 in two school districts.

Odds Ratio for Hispanic Students. The odds ratio for the Hispanic group in 13 districts indicated that students in the Hispanic group were no more likely to be suspended than student in the White group. The odds ratios in four districts were above 1.0, but when confidence intervals were examined, the confidence intervals approached 1.0 suggesting that these differences were not meaningful. In the remaining six school districts the odds ratios for the Hispanic group were between 1.453 and 2.655.

Table 40: Odds ratio of suspension for Black and Hispanic students.

	Black				Hispanic			
School District	**Exp**	**Lower CI**	**Upper CI**	**Sig**	**Exp**	**Lower CI**	**Upper CI**	**Sig**
Allegany	2.7	1.9	3.9	.000***	.2	.0	1.2	.076
Ann Arundel	3.6	3.3	3.8	.000***	1.3	1.1	1.4	.000***
Baltimore City	4.4	3.8	5.0	.000***	.5	.4	.6	.000***
Baltimore	3.3	3.1	3.6	.000***	1.2	1.1	1.4	.003**
Calvert	2.6	2.2	3.1	.000***	.8	.5	1.2	.270
Caroline	1.9	1.4	2.5	.000***	.7	.4	1.1	.149
Carroll	3.1	2.4	3.9	.000***	.1	.7	.4	.104
Cecil	2.9	2.5	3.4	.000***	1.2	.9	1.5	.319
Charles	2.9	2.6	3.3	.000***	1.0	.8	1.4	.738
Dorchester	3.4	2.8	4.3	.000***	.4	.2	.96	.038*
Frederick	3.8	3.3	4.3	.000***	1.5	1.2	1.7	.000***
Garrett	n/a	n/a	n/a	n/a	.000[1]			
Hartford	3.9	3.6	4.3	.000***	1.6	1.3	1.9	.000***
Howard	5.2	4.6	5.9	.000***	2.7	2.2	3.2	.000***
Kent	3.3	2.3	4.6	.000***	.8	.3	1.8	.549
Montgomery	5.8	5.2	6.4	.000***	2.6	2.4	3.0	.000***
Prince George's	3.3	2.8	3.9	.000***	1.1	.9	1.3	.441
Queen Ann's	4.4	3.1	6.3	.000***	2.1	1.2	3.8	.008**
St. Mary's	4.1	3.6	4.8	.000***	1.1	.8	1.6	.671
Somerset	2.3	1.8	3.0	.000***	.5	.2	.97	.041*
Talbot	3.8	2.8	5.2	.000***	1.0	.6	1.7	.972
Washington	3.6	3.0	4.4	.000***	1.9	1.4	2.6	.000***
Wicomico	4.6	4.0	5.2	.000***	1.7	1.3	2.1	.000***
Worcester	4.3	3.2	5.6	.000***	.8	.4	1.8	.624

*** p<.001, ** p<.01, *p<.05

Disability status

Table 41 shows that 11.2% of students with disabilities were suspended from Maryland schools during the 2012-2013 school year. Suspension rates ranged from 5% to 21.5%. Students with disabilities in three school districts were suspended at 1.5 times the state percentage of 11.24 percent. Students in one school district were suspended at a

[1] Hispanic n=45

percentage that was less than half of that of the state percentage of students with disabilities suspended. Nine additional school districts had suspension rates for students with disabilities below the state rate.

Just 4.4% of students without disabilities were suspended from school with a range of 2% to 10.5%. Three districts suspended more than two times the percent of students without disabilities suspended at the state level. Three districts suspended 1.5 times the percentage of students without disabilities suspended at the state level. Three districts suspended students without disabilities at a rate less than half the state rate.

Table 41: Enrollment and percent of students with and without disabilities suspended.

	Total		Disability		No Disability	
	(N)	% Susp	(N)	% Susp	(N)	% Susp
State	829581	5.1	92316	11.2	737265	4.4
Allegany	8409	5.7	1175	12.9	7234	4.6
Ann Arundel	75588	5.4	6943	11.7	68645	4.7
Baltimore City	79857	7.3	13233	12.4	66624	6.3
Baltimore County	103269	5.3	12458	10.6	90811	4.6
Calvert	15923	5.2	1262	10.5	14661	4.8
Caroline	5220	5.8	524	9.2	4696	5.4
Carroll	26324	3	2784	8.8	23540	2.3
Cecil	15007	7.7	1841	16.2	13166	6.5
Charles	25733	8.3	2216	17.00	23517	7.5
Dorchester	4448	10.8	381	17.6	4067	10.2
Frederick	39389	4	3891	14.1	35498	2.9
Garrett	3918	3.5	388	10.8	3530	2.8
Hartford	37108	5.8	4641	14.3	32467	4.6
Howard	50969	2.9	4147	8.9	46822	2.3
Kent	2011	7.3	223	13.5	1788	6.8
Montgomery	145001	2.4	15643	5.7	129358	2.0
Prince George's	118135	7	12992	15.2	105143	6.0
Queen Ann's	7503	2.5	915	6.1	6588	2.1
St. Mary's	2729	5	1570	10.0	15142	4.5
Somerset	16712	11.9	396	21.5	2333	10.5
Talbot	4277	4.7	345	12.2	3932	4.1
Washington	21914	2.6	2005	8.5	19909	2.0
Wicomico	13878	11	1576	15.2	12302	10.5
Worcester	6259	3.7	767	5.00	5492	3.5

Odds of Suspension for Students with Disabilities. This analysis utilized binary logistic regression to examine the odds ratios of suspension by disability status. Suspension was the criterion variable. Disability was the predictor, and No Disability was the reference category because the No Disability category was the largest group in the state and the largest group in all of the school districts. The No Disability group was the reference category, so it does not have an odds ratios.

Table 42 displays the odds ratio, lower and upper confidence intervals, and the significance test for each district in Maryland. The odds of being suspended for students in the Disability group were significantly higher than the odds of being suspended for students in the No Disability group in all but Worcester School District. The odds of suspension ranged from 1.5 to 5.5. The odds ratio for students with disabilities was below 2.0 in four counties. The odds ratio for students with disabilities was above 5.0 in one district, above 4.0 in four districts, and above 3.0 in four districts. The odds ratio for students with disabilities was above 2.0 in the remaining districts.

Table 42: Odds ratio for students with disabilities.

County	Exp(B)	Lower CI	Upper CI	Sig.
Allegany	3.1	2.5	3.8	.000***
Ann Arundel	2.7	2.4	2.9	.000***
Baltimore County	2.5	2.3	2.7	.000***
Baltimore City	2.1	2.6	2.2	.000***
Calvert	2.3	1.9	2.8	.000***
Caroline	1.8	1.3	2.4	.001**
Carroll	4.0	3.4	4.7	.000***
Cecil	2.8	2.4	3.2	.000***
Charles	2.5	2.2	2.9	.000***
Dorchester	1.9	1.4	2.5	.000***
Frederick	5.5	4.9	6.1	.000***
Garrett	4.3	2.9	6.3	.000***
Hartford	3.5	3.2	3.8	.000***
Howard	4.1	3.6	4.6	.000***
Kent	2.1	1.4	3.3	.001**
Montgomery	3.0	2.8	3.2	.000***
Prince George's	2.8	2.6	2.9	.000***
Queen Ann's	3.1	2.3	4.3	.000***
Somerset	2.3	1.8	3.1	.000***
St. Mary's	2.3	2.0	2.8	.000***
Talbot	3.2	2.3	4.7	.000***
Washington	4.6	3.8	5.6	.000***
Wicomico	1.5	1.3	1.8	.000***
Worcester	1.4	1.0	2.1	.045*

***p<.001, **p<.01, *p<.05

Study 2

Six behaviors were identified for inclusion in this study and were grouped according to whether they were consider low (class or school disruption and general staff disrespect / insubordination), medium (bullying / cyberbullying and fighting with peers) or high (drugs and weapons) level offenses. The determination that an offense was considered to be low, medium, or high was made based on previous research studies that have utilized the *Analysis of Discipline Code Rating Form- Revised* and have coded these offenses as such (Fenning, et al., 2008b).

Percent of Behaviors Included

Each handbook was examined to determine which of the six identified behaviors were reflected in each district's handbook. For example, District X's handbook was examined to determine the total number of behaviors that were present. If District X contained 1 low level behavior (class or school disruption), 2 medium level behaviors (bullying and fighting) and one high level behavior (drugs) this district would have included 66.67% of the behaviors identified for inclusion in this study since it included 4 of the 6 possible behaviors. If this data were broken down by level of offense, District X would contain 1 out of 2 or 50% of the identified low level behaviors, 2 out of 2 or 100% of the medium level behaviors, and 1 out of 2 or 50% of the identified high level behaviors.

Nineteen of the twenty-four districts included all six identified behaviors within their handbooks. This means that these districts contained 100% of the identified behaviors for the handbook overall, and 100% of the low, medium, and high level behaviors. One district included 83.33% of the identified behaviors, one had 66.67% of the identified behaviors, and two had 50% of the identified behaviors. One school district included only 16.67% of the identified behaviors.

Table 43 displays a summary of the percent of included behaviors by school district.

Percent of Behaviors Linked to Consequences

Each handbook was examined to determine which of the six identified behaviors were linked to consequences in each district's handbook. Nineteen of the twenty-four district handbooks examined had each of the behaviors included in the handbooks clearly

linked to consequences for that behavior. Two school districts included one low level behavior that was not clearly linked to identified consequences; two school districts had one medium level behavior that was identified but not linked to a consequence. One school district had one low level and one medium level behavior that were not clearly linked to a consequence.

Table 43 displays a summary of the included behaviors that were clearly linked to consequences by school district.

Table 43: Percent of behaviors included and linked to consequences.

	Percent Included				**Percent Linked to Consequences**			
County	**Overall**	**Low**	**Medium**	**High**	**Overall**	**Low**	**Medium**	**High**
Allegany	50	0	50	100	66.7	N/A	0	100
Ann Arundel	100	100	100	100	100	100	100	100
Baltimore City	100	100	100	100	100	100	100	100
Baltimore County	100	100	100	100	100	100	100	100
Calvert	100	100	100	100	100	100	100	100
Caroline	100	100	100	100	100	100	100	100
Carroll	50	0	50	100	100	N/A	100	100
Cecil	100	100	100	100	100	100	100	100
Charles	100	100	100	100	100	100	100	100
Dorchester	100	100	100	100	100	100	100	100
Frederick	100	100	100	100	100	100	100	100
Garrett	100	100	100	100	100	100	100	100
Hartford	100	100	100	100	100	100	100	100
Howard	100	100	100	100	100	100	100	100
Kent	100	100	100	100	100	100	100	100
Montgomery	100	100	100	100	66.7	50	50	100
Prince George's	100	100	100	100	100	100	100	100
Queen Ann's	100	100	100	100	100	100	100	100
Somerset	16.7	0	50	0	0	N/A	0	N/A
St. Mary's	100	100	100	100	100	100	100	100
Talbot	83.3	50	100	100	80	0	100	100
Washington	100	100	100	100	100	100	100	100
Wicomico	100	100	100	100	100	100	100	100
Worcester	66.7	50	50	100	75	0	100	100

Repeat Offenses

Each handbook was reviewed to determine whether repeat offenses received similar or different consequences. The handbooks had to clearly indicate that a repeat offense would receive a different disciplinary consequence in order to be coded as having different disciplinary consequences for repeat offenses. This information was reviewed for low, medium, and high level offenses for each school district's handbook.

Sixteen school districts did not identify any different consequences for repeat offenses for any of their identified behaviors. One school district's handbook had different consequences for repeat offenses identified for each of the behaviors included in its handbook. One school district included different consequences for repeat offenses for its included low and medium level behaviors. Five school districts had different consequences for repeat offenses for one of their identified high level behaviors. Table 44 displays the percent of behaviors that received different consequences for repeat offenses.

Administrator Discretion

Each handbook was also reviewed to determine whether administrators had any discretion in determining consequences for low, medium, and high level behaviors. Administrator discretion was determined to be present in each handbook that provided more than one consequence for a specified behavioral infraction or if the phrasing of the handbook indicated that a consequence "may include" but did not necessarily have to be a particular consequence.

Thirteen of the twenty-four districts allowed for administrator discretion in determining the consequences for each of the identified behaviors included in the

handbook. Dorchester County School District and St. Mary's School District had administrator discretion for all of their included low and medium level behaviors but for only half of their high level behaviors. Harford County School District allowed for administrator discretion for all of its low and medium level behaviors but not for high level behaviors. Charles County and Frederick County School Districts allowed for administrator discretion for all of their included low and high level behaviors and for half of their included medium level behaviors. Talbot and Worcester County School Districts allowed for administrator discretion for all of their included low level behaviors, none of their medium level behaviors, and half of their high level behaviors. Garrett County School District allowed for administrator discretion for half of its low and high level behaviors and for all of the included medium level behaviors. Montgomery County School District included administrator discretion for half of the high level behaviors, none of the medium level behaviors, and all of the high level behaviors. Allegany County School District allowed for administrator discretion only for its high level behaviors. Somerset County School District did not allow for any administrator discretion for its included behaviors. Table 44 displays the percentage of the included behaviors that had any degree of administrator discretion when determining consequences.

Table 44: Percent of behaviors with repeat consequences and administrator discretion.

	Percent Repeat Consequences			Percent Administrator Discretion		
County	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Allegany	N/A	0	0	N/A	0	100
Ann Arundel	100	100	100	100	100	100
Baltimore City	0	0	0	100	100	100
Baltimore County	0	0	0	100	100	100
Calvert	0	0	0	100	100	100
Caroline	0	0	0	100	100	100
Carroll	N/A	0	0	N/A	100	100
Cecil	0	0	0	100	100	100
Charles	0	0	0	50	100	100
Dorchester	0	0	0	100	100	50
Frederick	0	0	0	50	100	100
Garrett	0	50	100	100	50	50
Hartford	0	0	50	100	100	0
Howard	0	0	50	100	100	100
Kent	0	0	0	100	100	100
Montgomery	0	0	0	0	50	100
Prince George's	0	0	50	100	100	100
Queen Ann's	0	0	0	100	100	100
Somerset	N/A	0	N/A	N/A	0	N/A
St. Mary's	100	100	0	100	100	50
Talbot	0	0	0	0	100	50
Washington	0	0	0	100	100	100
Wicomico	0	0	50	100	100	100
Worcester	0	0	50	0	100	50

Types of Consequences

Each handbook was reviewed to determine the percentage of positive and negative consequences each behavior had as a potential consequence. Positive consequences included: behavior contract, counseling, mentoring, parent conference, peer mediation, prevention, skill building, student communication, substance abuse intervention, and teacher communication. Negative consequences included: academic / discipline probation, alternative school, class removal, detention, discipline board

hearing, expulsion, fines, in school suspension, out of school suspension, police involvement, privilege loss, Saturday detention, and work detention.

Twenty out of twenty-four school districts had handbooks in which the percent of negative consequences outnumbered the percent of positive consequences. School districts that contained a higher percentage of positive consequences included: Baltimore City, Baltimore County, and Prince George's County School Districts. Somerset County School District did not contain any consequences in its handbook. Six school districts (Ann Arundel, Calvert, Caroline, Cecil, Garrett, and Howard) had their highest concentration of positive consequences for low level behaviors. Seven school districts (Dorchester, Frederick Montgomery, Talbot, Washington, Wicomico, and Worcester) had their highest concentration of positive consequences for medium level behaviors. Two districts (Prince George's and St. Mary's) had an equally high percentage of positive consequences distributed between low and medium level offenses. Four school districts (Allegany, Baltimore County, Hartford, and Kent) had the highest concentration of positive consequences for high level behaviors. Four school districts (Baltimore City, Carroll, Charles, and Queen Ann's) had an equally high percentage of positive consequences distributed between medium and high level behaviors.

The highest percentage of included negative consequences was found within high level offenses for 10 school districts (Allegany, Ann Arundel, Baltimore City, Baltimore County, Carroll, Charles, Kent, Montgomery, St. Mary's, and Worcester). The highest percentage of included negative consequences was found within medium level behaviors for three school districts (Queen Ann's, Talbot, and Washington) and within low level behaviors for three school districts (Cecil, Garrett, and Howard). Three school districts

(Frederick, Prince George's, and Wicomico) had an equally high number of negative consequences displayed for medium and high level offenses. One school district (Caroline) had an equally high number of included negative consequences for low and medium level offences. Two school districts (Calvert and Dorchester) included higher concentrations of negative consequences at the same percentage for low and high level behaviors. Two districts (Hartford and Somerset) contained the same percent of included negative consequences for all levels of behavioral infractions.

The percent of identified consequences for low, medium, and high level offenses is displayed in Table 45.

Behavioral Consequences and Percent Suspended

The data was next examined by comparing the percent of behavioral consequences each handbook included to the percent of students who were suspended in each school district.

Table 45 displays the percent of positive and negative consequences for each school district and the percent of students each school district suspended. It is important to consider the three school districts that suspended more than ten percent of their student population during the 2012-2013 school year as these districts suspended their students at a rate of over 2 times that of districts in the rest of the state. These school districts included: Somerset, Dorchester, and Wicomico. It is important to highlight the absence or the low probability of the opportunity to receive positive consequences for disciplinary infractions across all of these districts. In districts that suspended students at a percent that was less than half of that of the state total, one of the two school districts evidenced more opportunities for positive consequences, overall.

Table 45: Percent of consequences and percent of total students suspended.

	Positive				**Negative**				
County	**Total**	**Low**	**Medium**	**High**	**Total**	**Low**	**Medium**	**High**	**% Sus**
Allegany	1.7	0	0	5.0	5.1	0	0	15.4	5.7
Ann Arundel	45.0	80.0	35.0	20.0	52.6	46.2	50.0	61.5	5.4
Baltimore City	68.3	65.0	70.0	70.0	52.6	46.2	50.0	61.5	7.3
Baltimore County	68.3	60.0	70.0	75.0	53.9	42.3	50.0	69.2	5.3
Calvert	13.3	25.0	5.0	10.0	44.9	46.2	42.3	46.2	5.2
Caroline	11.7	25.0	10.0	0	42.3	50.0	50.0	26.9	5.8
Carroll	10.00	0	15.0	15.0	18.0	0	19.2	34.6	3
Cecil	15.00	30.0	10.0	5.0	35.9	50.0	30.8	26.9	7.7
Charles	3.3	0	5.0	5.0	16.7	7.7	19.2	23.1	8.3
Dorchester	3.3	0	10.0	0	18.0	19.2	15.4	19.2	10.8
Frederick	11.7	0	20.0	15.0	20.5	15.4	23.1	23.1	4
Garrett	11.7	30.0	0	5.0	24.4	34.6	11.5	26.9	3.5
Hartford	3.33	0	0	10.0	7.7	7.7	7.7	7.7	5.8
Howard	15.0	30.0	10.0	5.0	42.3	50.0	38.5	38.5	2.9
Kent	3.3	0	0	10.0	10.3	7.7	4.7	15.4	7.3
Montgomery	3.3	0	10.0	0	9.0	7.7	3.9	15.4	2.4
Prince George’s	56.7	70.0	70.0	30.0	48.7	38.5	53.9	53.9	7
Queen Ann’s	21.7	15.0	25.0	25.0	41.0	30.8	50.0	42.3	2.5
Somerset	0	0	0	0	0	0	0	0	11.9
St. Mary’s	3.3	5.0	5.0	0	16.7	15.4	15.4	19.2	5.0
Talbot	10.0	0	20.0	10.0	19.2	0	38.5	19.2	4.7
Washington	1.7	0	5.0	0	24.4	23.1	26.9	23.1	2.6
Wicomico	13.3	10.0	25.0	5.0	21.8	11.5	26.9	26.9	11
Worcester	8.3	0	15.0	10.0	9.0	0	11.5	15.4	3.7

Race and Consequences

An analysis of race data alongside the positive and negative consequences included in each handbook examined this data in relationship to the percent of Black and Hispanic students suspended and the odds of suspension for Black and Hispanic students. Table 46 displays the percent of positive and negative consequences included along with the percent of Black and Hispanic students suspended and the odds of suspension for Black and Hispanic students.

Percent of Black Students Suspended. Two districts were identified as suspending Black students at a rate that was two times higher than the overall state percent of Black students suspended. These districts were Dorchester and Wicomico County School Districts. These school districts contained more negative than positive consequences across all levels of disciplinary infractions.

Three of the seven school districts (Baltimore City, Baltimore County, and Prince George's) that suspended Black students at a lower rate than the total state percentage had handbooks where the overall percent of positive consequences for behavioral infractions outweighed the potential negative consequences. These counties had higher percentages of positive consequences across all levels of offenses, with the exception of high level offenses in Prince George's County School District where the percent of negative consequences outweighed the potential positive consequences for behavioral infractions. Queen Ann's County also contained more opportunities for positive consequences compared to many other school districts in the state even though the percent of negative consequences outnumbered the percent of positive consequences.

The remaining three districts (Howard, Montgomery, and Washington) had handbooks where the percent of negative consequences outnumbered the positive consequences.

Odds of Suspension for Black Students. Seventeen school districts (Ann Arundel, Baltimore City, Baltimore County, Carroll, Dorchester, Frederick, Hartford, Howard, Kent, Montgomery, Prince George's, Queen Ann's, St. Mary's, Talbot, Washington, Wicomico, and Worcester) suspended Black students at a rate of at least three times the rate of White students. All but three of these school districts (Baltimore City, Baltimore County, and Prince George's County) had handbooks in which the negative consequences outweighed the positive consequences. Further, over half of these districts had zero positive consequences for low level behaviors while only three districts had zero negative consequences for low level behaviors. In the majority of instances the percentage of negative consequences by level of offense outweighed the percentage of positive consequences included in each handbook.

Percent of Hispanic Students Suspended. Two school districts were identified as suspending Hispanic students at a rate that was twice as high as the overall state percentage of Hispanic students suspended. These counties included Cecil County and Wicomico County. Two school districts were identified as suspending Hispanic students at a rate that was at least half of that of the overall state percentage of Hispanic students suspended. These school districts were Allegany and Garrett County School Districts. Across all of these districts the handbooks contained more negative than positive consequences. There were no major differences between those districts that suspended Hispanic students at a rate that was two times higher or half that of the state percent of Hispanic students suspended.

Odds of Suspension for Hispanic Students. The majority of school districts did not suspend Hispanic students at a disproportionate rate compared to White students. Two school districts suspended Hispanic students at a rate that was two times that of White students. These districts were Howard and Montgomery County School Districts. In these school districts, more negative than positive consequences were found.

Three school districts suspended Hispanic students at a rate that was statistically significant and at a rate lower than that of White students. These included: Baltimore City, Dorchester, and Somerset County School Districts. The handbooks for these districts were vastly different from each other. Baltimore City School District had a school handbook that contained more positive than negative consequences. Dorchester County School District contained primarily negative consequences. Somerset County School District did not contain any consequences in its handbook.

Table 46: Percent of consequences, odds of suspension, and percent suspended for Black and Hispanic students.

	Positive Consequences				Negative Consequences				Black		Hispanic	
County	**Total**	**Low**	**Medium**	**High**	**Total**	**Low**	**Medium**	**High**	**Odds**	**% Susp.**	**Odds**	**% Susp.**
Allegany	1.7	0	0	5.0	5.1	0	0	15.4	2.7	13.7	.2	1.0
Ann Arundel	45.0	80.0	35.0	20.0	52.6	46.2	50.0	61.5	3.6	11.5	1.3	4.5
Baltimore City	68.3	65.0	70.0	70.0	52.6	46.2	50.0	61.5	4.4	8.1	.5	1.9
Baltimore County	68.3	60.0	70.0	75.0	53.9	42.3	50.0	69.2	3.3	9.1	1.2	3.6
Calvert	13.3	25.0	5.0	10.0	44.9	46.2	42.3	46.2	2.6	10.6	.8	3.5
Caroline	11.7	25.0	10.0	0	42.3	50.0	50.0	26.9	1.9	9.4	.7	3.7
Carroll	10.00	0	15.0	15.0	18.0	0	19.2	34.6	3.1	8.5	.7	2.0
Cecil	15.00	30.0	10.0	5.0	35.9	50.0	30.8	26.9	2.9	17.5	1.2	7.7
Charles	3.3	0	5.0	5.0	16.7	7.7	19.2	23.1	2.9	11.8	1.0	4.6
Dorchester	3.3	0	10.0	0	18.0	19.2	15.4	19.2	3.4	18.5	.4	2.8
Frederick	11.7	0	20.0	15.0	20.5	15.4	23.1	23.1	3.8	10.5	1.5	4.3
Garrett	11.7	30.0	0	5.0	24.4	34.6	11.5	26.9	n/a	40	0	0
Hartford	3.33	0	0	10.0	7.7	7.7	7.7	7.7	3.9	13.5	1.6	5.9
Howard	15.0	30.0	10.0	5.0	42.3	50.0	38.5	38.5	5.2	7.2	2.7	3.8
Kent	3.3	0	0	10.0	10.3	7.7	4.7	15.4	3.3	15.4	.8	4.1
Montgomery	3.3	0	10.0	0	9.0	7.7	3.9	15.4	5.8	5.6	2.6	2.6
Prince George's	56.7	70.0	70.0	30.0	48.7	38.5	53.9	53.9	3.3	9.0	1.1	3.1
Queen Ann's	21.7	15.0	25.0	25.0	41.0	30.8	50.0	42.3	4.4	8.1	2.1	4.1
Somerset	0	0	0	0	0	0	0	0	2.3	12.5	.5	3.6
St. Mary's	3.3	5.0	5.0	0	16.7	15.4	15.4	19.2	4.1	17.5	1.1	4.1
Talbot	10.0	0	20.0	10.0	19.2	0	38.5	19.2	3.8	11.2	1.0	3.2
Washington	1.7	0	5.0	0	24.4	23.1	26.9	23.1	3.6	6.3	1.9	3.4
Wicomico	13.3	10.0	25.0	5.0	21.8	11.5	26.9	26.9	4.6	20.3	1.7	8.4
Worcester	8.3	0	15.0	10.0	9.0	0	11.5	15.4	4.3	9.2	.8	1.9

Students with Disabilities and Consequences.

Data relative to the suspension of students with disabilities was examined alongside policy ratings. The percent of students with disabilities suspended was reviewed along with information about the odds of suspension for students with disabilities. Table 47 summarizes the percentages of positive and negative consequences by school district alongside the odds of suspension for students with disabilities and the percent of students with disabilities suspended by school district.

Percent of Students with Disabilities Suspended. Three school districts, Charles County School District, Dorchester County School District, and Somerset County School District, suspended students with disabilities at a rate that was 1.5 times greater than the state percent of students with disabilities suspended. These school districts all had low or no opportunities to receive positive consequences.

The three school districts with the lowest percentage of students with disabilities suspended included: Worcester County School District, Queen Ann's County School District, and Carroll County School District. More opportunities for positive consequences were found in these districts compared to districts that suspended higher percentages of students with disabilities.

The school districts that had a lower percentage of students with disabilities suspended included more positive consequences than those districts that suspended higher percentages of students with disabilities. Additionally, with the exception of the difference between medium and high level offenses in Worcester County School District, these districts also had higher percentages of positive consequences given to students as the level of behavior increased.

Odds of Suspension for Students with Disabilities. Ten school districts (Allegany, Carroll, Frederick, Garrett, Hartford, Howard, Montgomery, Queen Ann's, Talbot, and Washington) suspended students with disabilities at an odds of 3.0 times or greater compared to their peers without disabilities. Four school districts (Caroline, Dorchester, Wicomico, and Worcester) suspended students with disabilities at an odds ratio that fell below 2.0. Across all of these districts, both those that suspended students with disabilities at an odds that was greater than 3 times the rate of students without disabilities and those that suspended students with disabilities at an odds that was under 2 times the rate of students without disabilities, the percent of negative consequences outweighed the percent of include positive consequences.

Table 47: Percent of consequences, odds of suspension, and percent suspended for students with disabilities.

	Positive				Negative				Students with Disabilities	
County	**Total**	**Low**	**Medium**	**High**	**Total**	**Low**	**Medium**	**High**	**Odds**	**Percent**
Allegany	1.7	0	0	5.0	5.1	0	0	15.4	3.1	12.9
Ann Arundel	45.0	80.0	35.0	20.0	52.6	46.2	50.0	61.5	2.6	11.7
Baltimore City	68.3	65.0	70.0	70.0	52.6	46.2	50.0	61.5	2.5	12.4
Baltimore County	68.3	60.0	70.0	75.0	53.9	42.3	50.0	69.2	2.1	10.6
Calvert	13.3	25.0	5.0	10.0	44.9	46.2	42.3	46.2	2.3	10.5
Caroline	11.7	25.0	10.0	0	42.3	50.0	50.0	26.9	1.8	9.2
Carroll	10.00	0	15.0	15.0	18.0	0	19.2	34.6	4.0	8.8
Cecil	15.00	30.0	10.0	5.0	35.9	50.0	30.8	26.9	2.8	16.2
Charles	3.3	0	5.0	5.0	16.7	7.7	19.2	23.1	2.5	17.0
Dorchester	3.3	0	10.0	0	18.0	19.2	15.4	19.2	1.9	17.6
Frederick	11.7	0	20.0	15.0	20.5	15.4	23.1	23.1	5.5	14.1
Garrett	11.7	30.0	0	5.0	24.4	34.6	11.5	26.9	4.3	10.8
Hartford	3.33	0	0	10.0	7.7	7.7	7.7	7.7	3.5	14.3
Howard	15.0	30.0	10.0	5.0	42.3	50.0	38.5	38.5	4.1	8.9
Kent	3.3	0	0	10.0	10.3	7.7	4.7	15.4	2.1	13.5
Montgomery	3.3	0	10.0	0	9.0	7.7	3.9	15.4	3.0	5.7
Prince George’s	56.7	70.0	70.0	30.0	48.7	38.5	53.9	53.9	2.8	15.2
Queen Ann’s	21.7	15.0	25.0	25.0	41.0	30.8	50.0	42.3	3.1	6.1
Somerset	0	0	0	0	0	0	0	0	2.3	21.5
St. Mary’s	3.3	5.0	5.0	0	16.7	15.4	15.4	19.2	2.3	10.0
Talbot	10.0	0	20.0	10.0	19.2	0	38.5	19.2	3.2	12.2
Washington	1.7	0	5.0	0	24.4	23.1	26.9	23.1	4.6	8.5
Wicomico	13.3	10.0	25.0	5.0	21.8	11.5	26.9	26.9	1.5	15.2
Worcester	8.3	0	15.0	10.0	9.0	0	11.5	15.4	1.4	5.0

Discussion

Across all school districts Black or African American students had a higher odds of being suspended compared to their White counterparts. This finding is consistent with previous research findings (Krezmien et al., 2006; Mattison & Aber, 2007; Mendez & Knoff, 2003; Noltemeyer & McLoughlin, 2010; Shirley & Cornell, 2011). Results for Hispanic students were mixed with the majority of school districts showing that Hispanic students were not suspended at a rate disproportionate to their representation in the population. However, six school districts evidenced a higher than expected rate of suspension for Hispanic students with one school district evidencing an under representation in suspension rates for Hispanic students. This supports evidence found in the literature that shows that some researchers have found Hispanic students to be overrepresented (Afinson et al, 2010; Zhang et al., 2004) or suspended at a rate similar to that of White students (Cooley, 1995; Krezmien et al., 2006). Students with disabilities also had a higher odds of being suspended compared to their peers without disabilities. This finding was also consistent with previous research findings (Goran & Gage, 2011; Krezmien et al., 2006; Mendez, 2003; Skiba et al., 1997; Vincent et al., 2012).

Considering the data included in the handbooks as a whole, it is important to note that in twenty of the twenty-four handbooks examined, the inclusion of negative consequences outweighed the number of positive consequences included in the handbook. The exceptions to this were Baltimore County School District, Baltimore City School District, and Prince George's County School District. These districts contained more positive than negative consequences. Somerset County School District did not contain any consequences in its handbook. This is an important finding given the move toward positive behavior supports and multi-tiered systems of support. Given this

movement, one would expect to see more school districts implementing creative approaches to discipline that focus more on skill building and skill teaching. However, in the vast majority of school districts in this state, this has yet to happen. This finding is consistent with the findings by Fenning and colleagues (2008) that demonstrated that school districts still have more negative consequences for behavioral infractions than positive consequences designed to support the student and change the behavior.

In examining the three districts that suspended the highest percentages of students overall, it is important to note that across all three of these districts, students had very limited chances to receive positive consequences for behavioral infractions. In one of the school districts that was most likely to suspend the lowest percentage of students overall, there was a much higher chance to receive positive consequences based on the consequences described in the district's handbook.

When examining data relative to race, it is important to note that many of the districts suspended Black students at an odds that was three times greater than that of White students. In fourteen out of seventeen of these cases, the percentage of negative consequences in each handbook outweighed the positive consequences. Additionally, it is important to consider data relative to the percent of Black students suspended in each school district relative to the percent of Black students suspended in the entire state of Maryland. In the two districts most likely to suspend Black students at above two times the state rate, the handbooks for these districts were more reactionary with very few opportunities for positive consequences and proactive teaching. However, in three out of the seven districts that suspended Black students at a rate that was lower than the state total percentage of Black students suspended, the handbooks contained more positive

than negative consequences. In a fourth district, although the negative consequences outweighed the positive consequences, there was still a high percentage of positive consequences included overall when compared to the rest of the school district's handbooks. While the odds ratios might still show a discrepancy between the odds of suspension between White and Black students, the school districts that had more positive consequences had a total percent of Black students suspended that fell below the state total of percent of students suspended. More research will be needed to see how these districts with more positive consequences change over time in the disproportionate suspension of Black students.

Lastly, when the percent of students with disabilities was examined alongside the content of the school handbooks, those districts that suspended students with disabilities at a higher rate had handbooks that were more punitive in nature than those with lower suspension rates for students with disabilities. In addition, those school districts that had a lower percent of students with disabilities suspended generally had more positive consequences as the level of the offense increased. Taken together, this finding suggests that there may be a relationship between positive consequences and a lower percent of students with disabilities being suspended from these schools. More research is needed to determine if this will extend to decreasing the disproportionate suspension rates of students with disabilities over time.

Limitations

It is important to acknowledge limitations of the current study. One limitation to this study is the manner in which data were reported by the State of Maryland on their reporting documents. Data were presented by race and by disability status, but data was

not presented in a way in which race and disability status can be analyzed together using one statistical analysis. It will be important for states to consider whether data collection procedures currently used to track suspension data might be redesigned in order to allow for more complex analyses in order to better understand the relationship between these individual level factors and suspensions.

Further, it is important to acknowledge that the analysis of the handbooks themselves did not allow for any analysis beyond a descriptive analysis of the handbook contents. This suggests that while percentages of handbook contents could be represented alongside odds ratios and suspension rates for race and for disability status, it was not possible to conclude that the policies themselves caused the odds ratios or suspension rates found in this study. More research is needed in order to better understand the link between school policy and the effect it has on school suspension rates.

Additionally, it is important to acknowledge that the handbooks themselves showed slight variation in the percentages of positive and negative consequences included. Only three school districts, Baltimore City, Baltimore County, and Prince George's, had handbooks that were significantly different from those of the other districts in that they contained far more positive than negative consequences. The fact that the handbooks had very little differences between them limited the ability to examine the relationship between the consequences each handbook contained and the odds of suspension and percent of students suspended. Since many districts are currently in the process of redesigning school handbooks to include more proactive consequences, it will be important to conduct this study again in the future to determine how these changes in

policy relate to changes in the percent of students suspended and the odds of suspension for various student groups.

Directions for Future Research

Future research studies should continue to examine the relationship between school handbook policies and student suspension rates. The results from this study show promise that for various subgroups of students at highest risk for suspension, the risk of suspension may have a relationship with the types of behavioral consequences noted in the various handbooks. More research is needed to examine these trends as districts continue to change their handbooks to include more proactive responses to student behavioral infraction. Future studies should continue to examine this issue to determine the degree to which the odds of suspension change for these various groups over time and how the district policies are also changing.

Researchers may also choose to examine the variable of administrator discretion in greater detail. An examination of the handbooks revealed that the vast majority of offenses included in this study allowed for administrator discretion when assigning consequences. It would be important to examine the methods that assistant principals use when assigning consequences to students to determine how those methods might interact with the rates of suspension that we see within the public schools.

Conclusion

Despite years of research that suggests that out of school suspension and punitive discipline approaches do not work to resolve student behavior (Skiba, 2014), the vast majority of handbooks continue to approach discipline from a punitive perspective. Educators need to begin to incorporate proactive disciplinary approaches into their

response to student behavior. It is only when we begin to teach students expected behaviors and give them time to practice and correct instances of misbehavior through proactive approaches that we will begin to see behavioral change in our students. Further, despite years of research that suggests that students with disabilities (Goran & Gage, 2011; Krezmien et al., 2006; Mendez, 2003; Skiba et al., 1997; Vincent et al., 2012) and Black students (Krezmien et al., 2006; Mattison & Aber, 2007; Mendez & Knoff, 2003; Noltemeyer & McLoughlin, 2010; Shirley & Cornell, 2011) have a higher odds of being suspended compared to reference groups it appears that little has happened to change the fact that these students continue to be disproportionately suspended. It is time that educators find alternatives to suspending students so that these groups of students do not continue to be marginalized and forced out of our public schools.

References

Anfinson, A., Autumn, S., Lehr, C., Riestenberg, N., & Scullin, S. (2010). Disproportionate minority representation in suspension and expulsion in Minnesota public schools: A report from the Minnesota department of education. *International Journal on School Disaffection, 7*(2), 5-20.

Bickmore, K. (2004). Discipline for democracy?: School districts' management of conflict and social exclusion. *Theory and Research in Social Education, 32(1),* 75-97. doi. 10.1080100933104.2004.10473244

Cooley, S. (1995). *Suspension/expulsion of regular and special education students in Kansas: A report to the Kansas state board of education.* Topeka: Kansas State Board of Education.

Fenning, P. (2008a). *Analysis of School Discipline Rating Form- Revised.* Unpublished measure.

Fenning, P., Golomb, S., Gordon, V., Kelly, M., Scheinfield, R., Morello, T., Kosinksi, A., & Banull, C. (2008b). Written discipline policies used by administrators: Do we have sufficient tools of the trade? *Journal of School Violence, 7(2),* 123-146. doi: 10.1300/J202v07n02_08

Goran, L. G., & Gage, N. A. (2011). A comparative analysis of language, suspension, and academic performance of students with emotional disturbance and students with learning disabilities. *Education & Treatment of Children, 34*(4), 469-488.

Gun-Free Schools Act, Public Law 103-382, 108 Statute 3907, Title 14 (1994).

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165-179.

Kinsler, J. (2011). Understanding the black–white school discipline gap. *Economics of Education Review, 30*(6), 1370-1383. doi:10.1016/j.econedurev.2011.07.004

Krezmien, M. P., Leone, P. E., & Achilles, G. M. (2006). Suspension, race, and disability: Analysis of statewide practices and reporting. *Journal of Emotional & Behavioral Disorders, 14*(4), 217-226.

Maryland State Department of Education (2014b). Special Education / Early Intervention Services Census Data and Related Tables October 25, 2013. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/2132014Student/sped13.pdf.

Maryland State Department of Education (2013a). Maryland Special Education / Early Intervention Services Census Data and Related Tables October 26, 2012. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/20122013Student/sped12_rev.pdf.

Maryland State Department of Education (2013b). Suspensions, Expulsions, and Health Related Exclusions Maryland Public Schools 2012-2013. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/2122013Student/susp13.pdf.

Maryland State Department of Education (2012). Enrollment by Race / Ethnicity and Gender and Number of Schools September 30, 2012. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/2122013Student/enroll15.pdf.

Mattison, E., & Aber, M. (2007). Closing the achievement gap: The association of racial climate with achievement and behavioral outcomes. *American Journal of Community Psychology, 40*(1), 1-12. doi:10.1007/s10464-007-9128-x

McFadden, A. C., Marsh, G. E., Price, B. J., & Hwang, Y. (1992). A study of race and gender bias in the punishment of handicapped school children. *Urban Review, 24*, 239-251.

Mendez, L. M., & Knoff, H. M. (2003). Who gets suspended and why: A demographic analysis of schools and disciplinary infractions in a large school district. *Education and Treatment of Children, 26*(1), 30-51.

Mendez, L. M. R. (2003). Predictors of suspension and negative school outcomes: A longitudinal investigation. *New Directions for Youth Development, 2003*(99), 17 33. doi: 10.1002/yd.52

Monahan, K.C., VanDerhei, S., Bechtold, J., & Cauffman, E. (2014). From the school yard to the squad car: School discipline, truancy, and arrest. *Journal of Youth and Adolescence, 43,* 1110-1122. doi. 10.1007/s10964-014-0103-1.

Noltemeyer, A. L., & Mcloughlin, C. S. (2010). Changes in exclusionary discipline rates and disciplinary disproportionality over time. *International Journal of Special Education, 25*(1), 59-70.

Petras, H., Masyn, K. E., Buckley, J. A., Ialongo, N. S., & Kellam, S. (2011). Who is most at risk for school removal? A multilevel discrete-time survival analysis of individual- and context-level influences. *Journal of Educational Psychology, 103*(1), 223-237. doi: 10.1037/a0021545

Rouse, H., Fantuzzo, J., & LeBoeuf, W. (2011). Comprehensive challenges for the well being of young children: A population-based study of publicly monitored risks in a large urban center. *Child & Youth Care Forum, 40*(4), 281-302. doi:10.1007/s10566-010-9138-y

The SEED School of Maryland. (2016). The SEED School of Maryland. Retrieved from: http://www.seedschoolmd.org/podium/default.aspx?t=138068.

Shirley, E. L. M., & Cornell, D. G. (2012). The contribution of student perceptions of school climate to understanding the disproportionate punishment of African American students in a middle school. *School Psychology International, 33*(2), 115-134. doi:10.1177/0143034311406815

Skiba, R. J. (2014). The failure of zero tolerance. *Reclaiming Children and Youth, 22(4),* 27-33.

Skiba, R. J., Peterson, R. L., & Williams, T. (1997). Office referrals and suspension: Disciplinary interventions in middle schools. *Education and Treatment of Children, 20*(3), 295-315.

Sullivan, A. L., Klingbeil, D. A., & Van Norman, E. R. (2013). Beyond behavior: Multilevel analysis of the influence of sociodemographics and school characteristics on students' risk of suspension. *School Psychology Review, 42*(1), 99-114.

U.S. Department of Education. (2014). Guiding principles: A resource guide for improving school climate and discipline. Retrieved from: http://www2.ed.gov/policy/gen/guid/school-discipline/guiding-principles.pdf.

Vincent, C. G., Sprague, J. R., & Tobin, T. J. (2012). Exclusionary discipline practices across students' Racial/Ethnic backgrounds and disability status: Findings from the pacific northwest. *Education and Treatment of Children, 35*(4), 585-601.

Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., & Sumi, W. C. (2005). The children and youth we serve: A national picture of the characteristics of students with emotional disturbances receiving special education. *Journal of Emotional and Behavioral Disorders, 13*(2), 79-96.

Wright, J. P., Morgan, M. A., Coyne, M. A., Beaver, K. M., & Barnes, J. C. (2014). Prior problem behavior accounts for the racial gap in school suspensions. *Journal of Criminal Justice, 42*(3), 257-266. doi:10.1016/j.jcrimjus.2014.01.001

Zhang, D., Katsiyannis, A., & Herbst, M. (2004). Disciplinary exclusions in special education: A 4-year analysis. *Behavioral Disorders, 29*, 337-347.

REFERENCES

Achilles, G. M., McLaughlin, M. J., & Croninger, R. G. (2007). Sociocultural correlates of disciplinary exclusion among students with emotional, behavioral, and learning disabilities in the SEELS national dataset. *Journal of Emotional and Behavioral Disorders, 15*(1), 33-45.

Anderson, K. A., Howard, K. E., & Graham, A. (2007). Reading achievement, suspensions, and African American males in middle school. *Middle Grades Research Journal, 2*(2), 43-63.

Anfinson, A., Autumn, S., Lehr, C., Riestenberg, N., & Scullin, S. (2010). Disproportionate minority representation in suspension and expulsion in Minnesota public schools: A report from the Minnesota department of education. *International Journal on School Disaffection, 7*(2), 5-20.

Arcia, E. (2007a). *A comparison of Elementary/K-8 and middle schools' suspension rates.* doi: 10.1177/0042085907304879

Arcia, E. (2007b). Variability in schools' suspension rates of black students. *Journal of Negro Education, 76*(4), 597-609.

Bauermeiser, J.J., Shrout P.E., Chávez, L., Rubio-Stipec, M., Ramírez, R., Padilla, L., Anderson, A., García, P., & Canino, G. (2007). ADHD and gender: Are risks the same for boys and girls? *Journal of Child Psychology and Psychiatry, 48(8),* 831 839. doi:10.1111/j.1469-7610.2007.01750.x

Bickmore, K. (2004). Discipline for democracy?: School districts' management of conflict and social exclusion. *Theory and Research in Social Education, 32(1),* 75-97. doi. 10.1080100933104.2004.10473244.

Blake, J., Butler, B., Lewis, C., & Darensbourg, A. (2011). Unmasking the inequitable discipline experiences of urban black girls: Implications for urban educational stakeholders. *Urban Review, 43*(1), 90-106. doi:10.1007/s11256-009-0148-8

Bowman-Perrott, L., Benz, M. R., Hsu, H., Kwok, O., Eisterhold, L. A., & Zhang, D. (2013). Patterns and predictors of disciplinary exclusion over time: An analysis of the SEELS national data set. *Journal of Emotional and Behavioral Disorders, 21*(2), 83-96. doi: 10.1177/1063426611407501

Bruns, E. J., Moore, E., Stephan, S. H., Pruitt, D., & Weist, M. D. (2005). The impact of school mental health services on out-of-school suspension rates. *Journal of Youth & Adolescence, 34*(1), 23-30. doi:10.1007/s10964-005-1333-z

Butler, B. R., Lewis, C. W., Moore, J. L. I.,II, & Scott, M. E. (2012). Assessing the odds: Disproportional discipline practices and implications for educational stakeholders. *Journal of Negro Education, 81*(1), 11-24.

Christle, C., Nelson, C. M., & Jolivette, K. (2004). School characteristics related to the use of suspension. *Education & Treatment of Children, 27*(4), 509-526.

Cooley, S. (1995). *Suspension/expulsion of regular and special education students in Kansas: A report to the Kansas state board of education.* Topeka: Kansas State Board of Education.

Costenbader, V. & Markson, S. (1998). School suspension: A study with secondary school students. *Journal of School Psychology, 36,* 59-82.

Davis Ganao, J. S., Suero Silvestre, F., & Glenn, J. W. (2013). Assessing the differential impact of contextual factors on school suspension for black and white students. *Journal of Negro Education, 82*(4), 393-407.

Duran, J. B., Zhou, Q., Frew, L. A., Kwok, O., & Benz, M. R. (2013). Disciplinary exclusion and students with disabilities: The mediating role of social skills. *Journal of Disability Policy Studies, 24*(1), 15-26. doi:10.1177/1044207311422908

Eitle, T. M., & Eitle, D. J. (2004). Inequality, segregation, and the overrepresentation of African Americans in school suspensions. *Sociological Perspectives, 47*(3), 269-287.

Fasko, D., Grubb, D. J., & Osborne, J. S. (1995). An analysis of disciplinary suspensions. *MidSouth Educational Research Association,* Biloxi, MS.

Fenning, P. (2008). *Analysis of School Discipline Rating Form- Revised.* Unpublished measure.

Fenning, P., Golomb, S., Gordon, V., Kelly, M., Scheinfield, R., Morello, T., Kosinksi, A., & Banull, C. (2008). Written discipline policies used by administrators: Do we have sufficient tools of the trade? *Journal of School Violence, 7(2),* 123-146.

Gage, N. A., Josephs, N. L., & Lunde, K. (2012). Girls with emotional disturbance and a history of arrest: Characteristics and school-based predictors of arrest. *Education and Treatment of Children, 35*(4), 603-622.

Garson, G.D. (2013). *Hierarchical Linear Modeling: Guide and Applications.* Thousand Oaks: Sage.

Gersten, R., Fuchs, L. S., Compton, D., Coyne, M., Greenwood, C., & Innocenti, M. S. (2005). Quality indicators for group experimental and quasi-experimental research in special education. *Exceptional Children, 71*(2), 149-164.

Goran, L. G., & Gage, N. A. (2011). A comparative analysis of language, suspension, and academic performance of students with emotional disturbance and students with learning disabilities. *Education & Treatment of Children, 34*(4), 469-488.

Gregory, A., Cornell, D., & Fan, X. (2011). The relationship of school structure and support to suspension rates for black and white high school students. *American Educational Research Journal, 48*(4), 904-934. doi: 10.3102/0002831211398531

Gun-Free Schools Act, Public Law 103-382, 108 Statute 3907, Title 14 (1994).

Hannon, L., DeFina, R., & Bruch, S. (2013). The relationship between skin tone and school suspension for African Americans. *Race and Social Problems, 5*(4), 281 295. doi 10.1007/s12552-013-9104-z

Heard, H. E. (2007). Fathers, mothers, and family structure: Family trajectories, parent gender, and adolescent schooling. *Journal of Marriage & Family, 69*(2), 435-450. doi:10.1111/j.1741-3737.2007.00375.x

Hemphill, S. A., Plenty, S. M., Herrenkohl, T. I., Toumbourou, J. W., & Catalano, R. F. (2014). Student and school factors associated with school suspension: A multilevel analysis of students in Victoria, Australia and Washington State, United States. *Children & Youth Services Review, 36*, 187-194. doi:10.1016/j.childyouth.2013.11.022

Hemphill, S., & Hargreaves, J. (2009). The impact of school suspensions: A student wellbeing issue. *ACHPER Australia Healthy Lifestyles Journal, 56*(3-4), 5-11.

Hinojosa, M. S. (2008). Black-white differences in school suspension: Effect of student beliefs about teachers. *Sociological Spectrum, 28*(2), 175-193. doi:10.1080/02732170701796429

Hoffman, S. (2014). Zero benefit: Estimating the effect of zero tolerance discipline polices on racial disparities in school discipline. *Educational Policy, 28*(1), 69-95. doi:10.1177/0895904812453999

Horner, R. H., Carr, E. G., Halle, J., McGee, G., Odom, S., & Wolery, M. (2005). The use of single-subject research to identify evidence-based practice in special education. *Exceptional Children, 71*(2), 165-179.

Huck, S. W. (2011). *Reading statistics in research* (6th ed.). Boston: Pearson.

Hudson, S. S., Lewis, T., Stichter, J. P., & Johnson, N. W. (2011). Putting quality indicators to the test: An examination of 30 years of research. *Journal of Emotional and Behavioral Disorders, 19*(3), 143-155.

Kaplan, S. G., & Cornell, D. G. (2005). Threats of violence by students in special education. *Behavioral Disorders, 31*(1), 107-119.

Kaushal, N., & Nepomnyaschy, L. (2009). Wealth, race/ethnicity, and children's educational outcomes. *Children and Youth Services Review, 31*(9), 963-971. doi:10.1016/j.childyouth.2009.04.012

Kinsler, J. (2011). Understanding the black–white school discipline gap. *Economics of Education Review, 30*(6), 1370-1383. doi:10.1016/j.econedurev.2011.07.004

Krezmien, M. P. (2007). *Understanding disproportionate suspensions of minority students and students with disabilities: A multilevel approach.* ProQuest Information & Learning). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 68*(4-), 1409-1409. . (2007-99190-268).

Krezmien, M. P., Leone, P. E., & Achilles, G. M. (2006). Suspension, race, and disability: Analysis of statewide practices and reporting. *Journal of Emotional & Behavioral Disorders, 14*(4), 217-226.

Lee, T., Cornell, D., Gregory, A., & Fan, X. (2011). High suspension schools and dropout rates for black and white students. *Education & Treatment of Children, 34,* 167 192.

Losen, D.J. & Gillespie, J. (2012). Opportunities suspended: The disparate impact of disciplinary exclusion from school. The Civil Rights Project. Retrieved from: http://civilrightsproject.ucla.edu/resources/projects/center-for-civil-rights remedies/school-to-prison-folder/federal-reports/upcoming-ccrr-research/losen gillespie-opportunity-suspended-2012.pdf.

Losen, D. J., Simmons, A. B., Staudinger-Poloni, L., Rausch, M. K., & Skiba, R. (2003). *Exploring the link between low teacher quality and disciplinary exclusion.* Boston, MA: Harvard University Civil Right Project and Northeastern University Institute on Race and Justice.

Maryland State Department of Education. (2015). Maryland Report Card. Retrieved from: http://reportcard.msde.maryland.gov/.

Maryland State Department of Education (2014a). The Maryland Guidelines for a State Code of Discipline. Retrieved from: http://marylandpublicschools.org/MSDE/divisions/studentschoolsvcs/student_se vices_alt/docs/MDGuidelinesforStateCodeDiscipline_08072014.pdf

Maryland State Department of Education (2014b). Special Education / Early Intervention Services Census Data and Related Tables October 25, 2013. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/2132014Student/sped13.pdf.

Maryland State Department of Education. (2013). Maryland Public Schools Suspensions by School and Major Offense Category Out of School Suspensions and Expulsions 2012-2013. Retrieved from: http://marylandpublicschools.org/MSDE/divisions/planningresultstest/doc/20122013Student/susp13_sch_out.pdf.

Maryland State Department of Education (2013a). Maryland Special Education / Early Intervention Services Census Data and Related Tables October 26, 2012. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/20122013Student/sped12_rev.pdf.

Maryland State Department of Education (2013b). Suspensions, Expulsions, and Health Related Exclusions Maryland Public Schools 2012-2013. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/2122013Student/susp13.pdf.

Maryland State Department of Education (2012). Enrollment by Race / Ethnicity and Gender and Number of Schools September 30, 2012. Retrieved from: http://www.marylandpublicschools.org/msde/divisions/planningresultstest/doc/2122013Student/enroll15.pdf.

Mattison, E., & Aber, M. (2007). Closing the achievement gap: The association of racial climate with achievement and behavioral outcomes. *American Journal of Community Psychology, 40*(1), 1-12. doi:10.1007/s10464-007-9128-x

McFadden, A. C., Marsh, G. E., Price, B. J., & Hwang, Y. (1992). A study of race and gender bias in the punishment of handicapped school children. *Urban Review, 24*, 239-251.

Mcloughlin, C. S., & Noltemeyer, A. L. (2010). Research into factors contributing to discipline use and disproportionality in major urban schools. *Current Issues in Education, 13*(2)

Mendez, L. M., & Knoff, H. M. (2003). Who gets suspended and why: A demographic analysis of schools and disciplinary infractions in a large school district. *Education and Treatment of Children, 26*(1), 30-51.

Mendez, L. M., Knoff, H. M., & Ferron, J. M. (2002). School demographic variables and out of school suspension. *Psychology in the Schools, 39*(3), 259-277.

Mendez, L. M. R. (2003). Predictors of suspension and negative school outcomes: A longitudinal investigation. *New Directions for Youth Development, 2003*(99), 17 33.

Miller, M., Nevado-Montenegro, A., & Hinshaw, S.P. (2012). Childhood executive function continues to predict outcomes in young adult females with and without childhood-diagnosed ADHD. *Journal of Abnormal Child Psychology, 40,* 657 668. doi 10.1007/s10802-011-9599-y

Monahan, K.C., VanDerhei, S., Bechtold, J., & Cauffman, E. (2014). From the school yard to the squad car: School discipline, truancy, and arrest. *Journal of Youth and Adolescence, 43,* 1110-1122. doi. 10.1007/s10964-014-0103-1.

Mooney, P., Epstein, M. H., Reid, R., & Nelson, J. R. (2003). Status of and trends in academic intervention research for students with emotional disturbance. *Remedial and Special Education, 24*(5), 273-287.

Nichols, J. D. (2004). An exploration of discipline and suspension data. *Journal of Negro Education, 73*(4), 408-423.

Noltemeyer, A. L., & Mcloughlin, C. S. (2010). Changes in exclusionary discipline rates and disciplinary disproportionality over time. *International Journal of Special Education, 25*(1), 59-70.

Noltemeyer, A., & Mcloughlin, C. S. (2010). Patterns of exclusionary discipline by school typology, ethnicity, and their interaction. *Penn GSE Perspectives on Urban Education, 7*(1), 27-40.

Odom, S. L., Brantlinger, E., Gersten, R., Horner, R. H., Thompson, B., & Harris, K. R. (2005). Research in special education: Scientific methods and evidence-based practices. *Exceptional Children, 71*(2), 137-148.

Pei, L. K., Forsyth, C. J., Teddlie, S. K., Asmus, G., & Stokes, B. R. (2013). Bad behavior, ethnicity, and level of school diversity. *Deviant Behavior, 34*(1), 1-10. doi:10.1080/01639625.2012.679891

Petras, H., Masyn, K. E., Buckley, J. A., Ialongo, N. S., & Kellam, S. (2011). Who is most at risk for school removal? A multilevel discrete-time survival analysis of individual- and context-level influences. *Journal of Educational Psychology, 103*(1), 223-237. doi: 10.1037/a0021545

Raudenbush, S.W., Bryk, A.S., & Congdon, R. (2004). HLM6 for Windows. [Computer Software] Skokie, IL: Scientific Software International Inc.

Rausch, M.K. & Skiba, R. (2004). Unplanned outcomes: Suspensions and expulsions in Indiana. *Education Policy Briefs, 2(2),* 1-8.

Rouse, H., Fantuzzo, J., & LeBoeuf, W. (2011). Comprehensive challenges for the well being of young children: A population-based study of publicly monitored risks in a large urban center. *Child & Youth Care Forum, 40*(4), 281-302. doi:10.1007/s10566-010-9138-y

The SEED School of Maryland. (2016). The SEED School of Maryland. Retrieved from: http://www.seedschoolmd.org/podium/default.aspx?t=138068.

Shirley, E. L. M., & Cornell, D. G. (2012). The contribution of student perceptions of school climate to understanding the disproportionate punishment of African American students in a middle school. *School Psychology International, 33*(2), 115-134. doi:10.1177/0143034311406815

Skiba, R. J. (2014). The failure of zero tolerance. *Reclaiming Children and Youth, 22(4),* 27-33.

Skiba, R.J., Chung, C.G., Thachok, M., Baker, T.L., Sheya, A. & Hughes, R.L. (2014). Parsing disciplinary disproportionality: Contributions of infraction, student, and school characteristics to out-of-school suspension and expulsion. *American Educational Research Journal, 51(4),* 640-670. doi: 10.3102/0002831214541670

Skiba, R. J., Horner, R. H., Choong-Geun Chung, Rausch, M. K., May, S. L., & Tobin, T. (2011). Race is not neutral: A national investigation of African American and Latino disproportionality in school discipline. *School Psychology Review, 40*(1), 85-107.

Skiba, R. J., Michael, R. S., Nardo, A. C., & Peterson, R. (2002). The color of discipline: Sources of racial and gender disproportionality in school punishment. *Urban Review, 34,* 317-342.

Skiba, R. J., Peterson, R. L., & Williams, T. (1997). Office referrals and suspension: Disciplinary interventions in middle schools. *Education and Treatment of Children, 20*(3), 295-315.

Smith-McKeever, T., Falconnier, L., & Gao, W. (2011). African American and white mothers' substance abuse, depression, and criminality as risk factors for child behavior problems. *Families in Society, 92*(1), 63-68. doi:10.1606/1044 3894.4058

Student Discipline, 603 CMR 53.00 (2014).

Sullivan, A. L., Klingbeil, D. A., & Van Norman, E. R. (2013). Beyond behavior: Multilevel analysis of the influence of sociodemographics and school characteristics on students' risk of suspension. *School Psychology Review, 42*(1), 99-114.

Sullivan, A.L., Van Norman, E.R., & Klingbeil, D.A. (2014). Exclusionary discipline of students with disabilities: Student and school characteristics predicting suspension. *Remedial & Special Education, 35(4),* 199-210. doi: 10.1177/0741932513519825

Theriot, M. T., Craun, S. W., & Dupper, D. R. (2010). Multilevel evaluation of factors predicting school exclusion among middle and high school students. *Children and Youth Services Review, 32*(1), 13-19.

Thompson, B., Diamond, K. E., McWilliam, R., Snyder, P., & Snyder, S. W. (2005). Evaluating the quality of evidence from correlational research for evidence-based practice. *Exceptional Children, 71*(2), 181-194.

Tobin, T. J., & Vincent, C. G. (2011). Strategies for preventing disproportionate exclusions of African American students. *Preventing School Failure, 55*(4), 192 201. doi:10.1080/1045988X.2010.532520

U.S. Department of Education. (2014). Guiding principles: A resource guide for improving school climate and discipline. Retrieved from: http://www2.ed.gov/policy/gen/guid/school-discipline/guiding-principles.pdf.

Vincent, C. G., Sprague, J. R., & Tobin, T. J. (2012). Exclusionary discipline practices across students' Racial/Ethnic backgrounds and disability status: Findings from the pacific northwest. *Education and Treatment of Children, 35*(4), 585-601.

Vincent, C. G., & Tobin, T. J. (2011). The relationship between implementation of school-wide positive behavior support (SWPBS) and disciplinary exclusion of students from various ethnic backgrounds with and without disabilities. *Journal of Emotional and Behavioral Disorders, 19*(4), 217-232. doi: 10.1177/1063426610377329

Wagner, M., Kutash, K., Duchnowski, A. J., Epstein, M. H., & Sumi, W. C. (2005). The children and youth we serve: A national picture of the characteristics of students with emotional disturbances receiving special education. *Journal of Emotional and Behavioral Disorders, 13*(2), 79-96.

Wallace, J. M., Jr., Goodkind, S., Wallace, C. M., & Bachman, J. G. (2008). Racial, ethnic, and gender differences in school discipline among U.S. high school students: 1991-2005. *Negro Educational Review, 59*(1-2), 47-62.

Ward, M.E. & Shelley, K. (2008). Hurricane Katrina: A longitudinal study of the achievement and behavior of displaced students. *Journal of Education for Students Placed at Risk, 13,* 297-317. doi: 10.1080/10824660802350391

Wei, X.., Yu, J. W., & Shaver, D. (2014). Longitudinal effects of ADHD in children with learning disabilities or emotional disturbances. *Exceptional Children, 80*(2), 205-219.

Welch, K., & Payne, A. A. (2012). Exclusionary school punishment: The effect of racial threat on expulsion and suspension. *Youth Violence and Juvenile Justice, 10*(2), 155-171.

Wright, J. P., Morgan, M. A., Coyne, M. A., Beaver, K. M., & Barnes, J. C. (2014). Prior problem behavior accounts for the racial gap in school suspensions. *Journal of Criminal Justice, 42*(3), 257-266. doi:10.1016/j.jcrimjus.2014.01.001

Zhang, D., Katsiyannis, A., & Herbst, M. (2004). Disciplinary exclusions in special education: A 4-year analysis. *Behavioral Disorders, 29*, 337-347.